

# *Catalogue of Swedish exports*

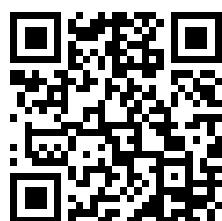
Sveriges allmänna exportförening

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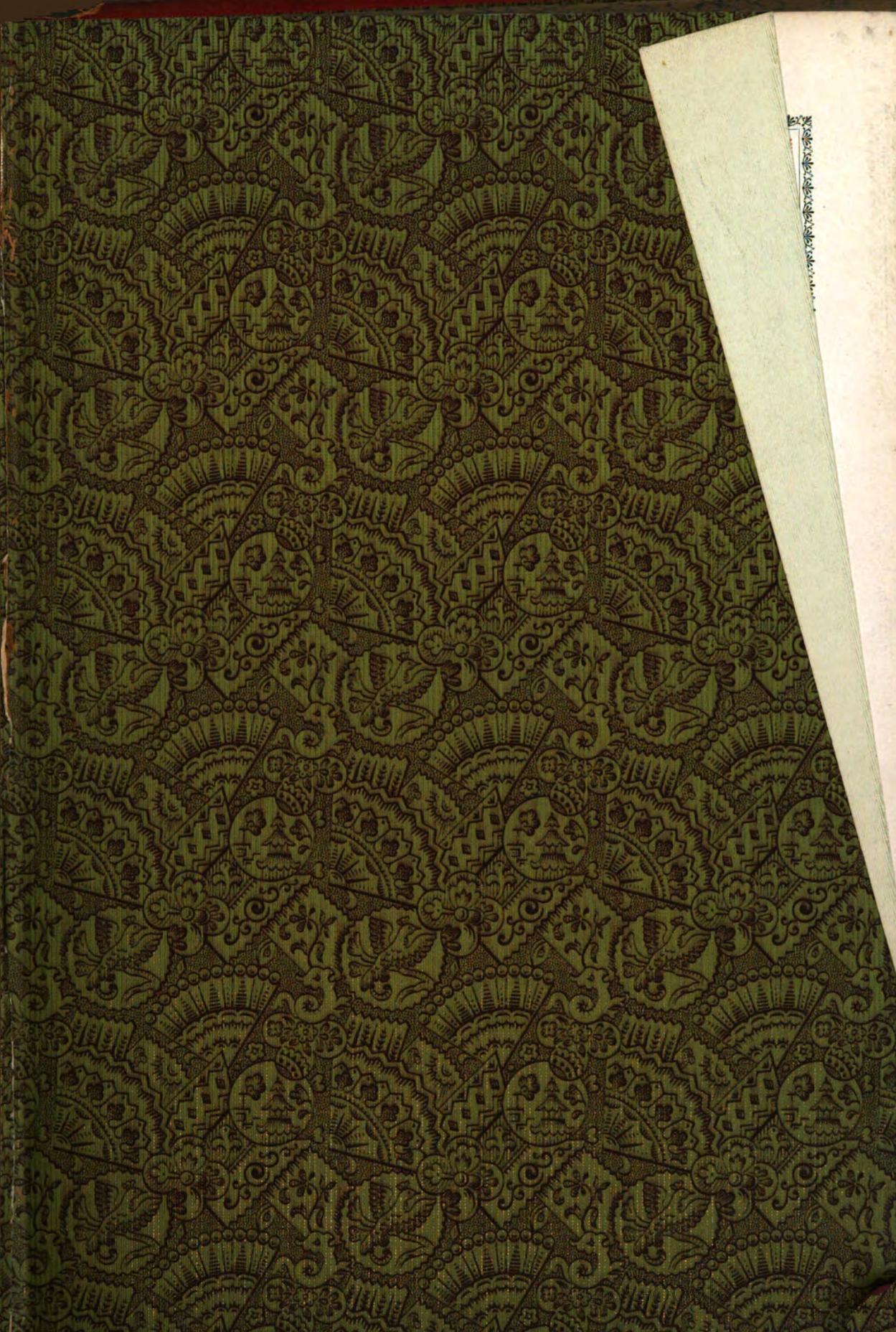


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Catalogue  
of  
Swedish Exports.





Sveriges allmänna exportförening

# CATALOGUE

OF

# SWEDISH EXPORTS

EDITED BY

WILHELM TESCH,

MANAGING DIRECTOR

OF

THE GENERAL EXPORT ASSOCIATION  
OF SWEDEN.



STOCKHOLM

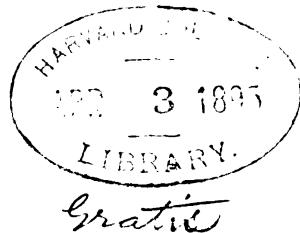
ROYAL PRINTING OFFICE P. A. NORSTEDT & SÖNER

1892

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## PREFACE.

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The Association, known as »Sveriges Allmänna Exportförening», i. e. »The General Export Association of Sweden», is founded for the purpose of »affording its members new or increased opportunities of exporting their products by suitable arrangements in Sweden and abroad».

The Association which numbers about 500 members, amongst whom are to be found the most prominent representatives of the various branches of Swedish industry and trade, has been formed for the benefit of its own members, of whom it receives a small annual subscription. It does no business on its own account, nor, when acting as an intermediary between buyers and sellers, does it charge any commission or accept any remuneration, the greater part of its expenses being defrayed by the State. The members acting on the Committee of Management receive no fees or other emoluments.

As this catalogue does not include the names of all the exporting firms of Sweden, nor of all the articles exported, all parties, who wish to buy goods of Swedish origin or manufacture, are requested to apply to »*Sveriges Allmänna Exportförening*, Stockholm», which will at once put them into direct

communication with such Swedish manufacturers or exporters as are most competent to meet their requirements.

The »Catalogue of Swedish Exports», the present edition of which is printed in 10,000 copies, will be sent postfree to any intending buyers of Swedish goods in any part of the world, on application to the office of the Association at Stockholm.

At last it may be pointed out that, although printed only in the English language, this catalogue will be useful even for German and French readers who will find a complete index on page 205 at the end of the volume.

Stockholm in November 1892.

*The Editor.*



## VORREDE.

Der Verein »Sveriges Allmänna Exportförening» (Allgemeiner Schwedischer Export-Verein) hat zum Zweck »durch günstige Übereinkommen in Schweden und im Auslande den Vereinsmitgliedern neue oder vermehrte Gelegenheiten zum Export darzubieten».

Der Verein zählt ungefähr 500 Mitglieder, unter welchen sich die hervorragendsten Vertreter der Industrie und des Handels Schwedens befinden.

Dieser Verein, welcher zum Nutzen seiner Mitglieder gegründet ist und von denselben einen kleinen Jahresbeitrag erhält, macht absolut keine Geschäfte für eigene Rechnung, noch weniger nimmt er, wenn er solche zwischen Käufern und Verkäufern vermittelt, irgend welche Kommission oder sonstige Vergütung von den Beteiligten. Ebenso wenig nehmen die Vorstandsmitglieder irgend welche Vergütung. Der Verein vermag ausserdem um so mehr seine Obliegenheiten in uninterressirter Weise zu erfüllen, als er den grössten Theil seiner Ausgaben vom Staate ersetzt bekommt.

Da dieser Katalog weder die Namen aller schwedischen Exportfirmen noch diejenigen aller Exportartikel enthält, so werden die Personen, welche Waaren schwedischen Ursprungs oder schwedischer Fabrikation zu kaufen wünschen, aufgefö-

dert sich an »*Sveriges Allmänna Exportförening*, Stockholm», zu wenden, welche sie in direkte Verbindung sofort setzen wird mit solchen schwedischen Fabrikanten und Exportören, welche am geeignetsten erscheinen ihren Bedürfnissen zu entsprechen.

Der Schwedische Exportkatalog, dessen gegenwärtige Ausgabe in 10,000 Exemplaren gedruckt ist, wird unentgeldlich jedem zugesandt, der schwedische Waaren zu beziehen beabsichtigt und sich an den Exportverein in Stockholm wendet.

Man bittet zu bemerken dass, obgleich dieser Katalog in englischer Sprache geschrieben ist, deutsche und französische Leser denselben benutzen können mit Hülfe des Pagina 205 am Ende des Buches befindlichen vollständigen Registers.

Stockholm im November 1892.

*Der Herausgeber.*



## PRÉFACE.

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La Société dite »Sveriges Allmänna Exportförening» (Société Générale d'Exportation de Suède) a pour but »de procurer à ses membres des débouchés nouveaux ou plus nombreux au moyen d'arrangements utiles tant en Suède qu'à l'étranger».

La Société compte environ 500 membres au nombre desquels se trouvent les principaux fabricants et négociants suédois, représentant toutes les branches de l'industrie et du commerce du pays.

Fondée pour le bénéfice de ses membres desquels elle ne perçoit qu'une cotisation minime, la Société ne fait aucune sorte d'affaires pour son propre compte. Quand elle agit comme intermédiaire entre les acquéreurs et les vendeurs, elle ne prélève aucune rétribution sous forme de commission ou autrement. Son désintéressement lui est d'autant plus facile que la plus grande partie de ses frais est couverte par une subvention de l'État. Les membres du Conseil d'Administration ne reçoivent aucune rétribution.

Ce catalogue ne comprenant pas toutes les maisons d'exportation ni tous les articles exportés, les personnes qui désireraient se procurer des marchandises d'origine ou de fabri-

cation suédoises sont priées de s'adresser à »*Sveriges Allmänna Exportförening*, Stockholm, qui se chargera de les mettre en communication directe avec les fabriques ou les exportateurs qui pourront le mieux satisfaire à leurs demandes.

Le présent catalogue, tiré à 10,000 exemplaires, sera envoyé gratuitement à tous ceux qui désireront se rendre acquéreurs d'articles suédois et qui voudront bien à cette fin s'adresser à la Société.

On demande à faire observer que, bien que ce catalogue soit rédigé en anglais, les lecteurs français ou allemands pourront également s'en servir au moyen de la table page 205 à la fin du volume.

Stockholm, Novembre 1892.

*l'Editeur.*





## The Foreign Trade of Sweden.

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According to the official Swedish statistics, the total value of the foreign trade of Sweden in 1890 — the last year for which returns have as yet been published — was estimated at 681,780,000 kronor, of which amount 304,592,000 kronor represented the **exports** and 377,188,000 kronor the **imports**.

In order to show how these figures compare with those for the whole decennium ending the aforesaid year, we annex the following statement:

	<b>Exports.</b>	<b>Imports.</b>
1881 .....	223,196,000 kr.	288,060,000 kr.
1882 .....	253,887,000 >	299,820,000 >
1883 .....	256,531,000 >	333,929,000 >
1884 .....	238,612,000 >	325,817,000 >
1885 .....	246,271,000 >	340,003,000 >
1886 .....	228,398,000 >	301,366,000 >
1887 .....	246,678,000 >	297,410,000 >
1888 .....	281,753,000 >	324,709,000 >
1889 .....	301,725,000 >	376,964,000 >
1890 .....	304,592,000 >	377,188,000 >

As the articles of which the **imports** are made up, have no concern with our present purpose, we shall leave the figures relating

to them out of account and only present here a table showing the **descriptions** and **values** of the principal articles **exported** from Sweden in 1890.

Live animals.....	9,921,867 kr.
Articles of food, animal produce.....	48,474,160 »
Grain and products thereof .....	8,950,163 »
Spirits and other liquors .....	3,331,948 »
Textile materials and manufactures .....	8,593,791 »
Hairs, feathers, hides, skins, bone, horn and products thereof.....	2,816,594 »
Tallow, oils, tar and similar materials or products thereof.....	2,912,443 »
Timber, sawn or hewn .....	108,574,165 »
Joinery and other wood work &c.....	4,148,260 »
Wood-pulp.....	8,049,444 »
Matches .....	7,870,780 »
Paper and articles of paper.....	23,380,631 »
Ores and mineral products .....	12,736,821 »
Metals, raw and manufactured.....	41,946,711 »
Ships, carriages, machinery, tools, instruments &c..	5,499,923 »
Other articles .....	7,384,162 »
<b>Total 304,591,863 kr.</b>	

To what extent the different countries have participated in the Swedish export during the last five years (1886—90), is shown in the subjoined table.

	Value of exported goods in kronor.				
	1886.	1887.	1888.	1889.	1890.
Norway .....	11,461,000	12,363,000	13,991,000	15,971,000	18,093,000
Finland.....	4,135,000	4,267,000	4,632,000	5,857,000	7,907,000
Russia.....	3,551,000	3,023,000	2,552,000	3,401,000	3,940,000
Denmark .....	25,738,000	32,029,000	34,837,000	34,170,000	33,231,000
Carried forward	44,885,000	51,682,000	56,012,000	59,399,000	63,171,000

Value of exported goods in kronor.

	<b>1886.</b>	<b>1887.</b>	<b>1888.</b>	<b>1889.</b>	<b>1890.</b>
Brought forward	44,885,000	51,682,000	56,012,000	59,399,000	63,171,000
Germany.....	20,797,000	24,275,000	27,150,000	36,232,000	36,677,000
Holland.....	9,260,000	8,486,000	13,749,000	13,443,000	16,278,000
Belgium.....	7,330,000	9,567,000	10,480,000	9,463,000	11,020,000
Great Britain and Ire-land.....	110,934,000	110,051,000	129,850,000	141,909,000	137,403,000
France .....	20,857,000	27,226,000	29,593,000	23,841,000	24,422,000
Portugal.....	1,235,000	1,318,000	1,807,000	2,335,000	1,101,000
Spain.....	5,856,000	6,465,000	5,581,000	5,469,000	7,430,000
Italy .....	782,000	1,115,000	522,000	1,055,000	458,000
Egypt.....	343,000	370,000	436,000	346,000	464,000
Algiers.....	589,000	415,000	558,000	631,000	753,000
The rest of Africa.....	698,000	1,197,000	1,565,000	3,118,000	1,413,000
Australia.....	1,640,000	880,000	2,503,000	1,560,000	2,198,000
The United States of America.....	2,634,000	2,806,000	1,147,000	1,448,000	919,000
The West-Indies.....	41,000	38,000	—	9,000	—
Brazil.....	224,000	279,000	334,000	546,000	575,000
The Argentine Repub-lic.....	—	—	332,000	790,000	261,000
Other Countries.....	293,000	508,000	134,000	131,000	49,000
<b>Total Kronor</b>	<b>228,398,000</b>	<b>246,678,000</b>	<b>281,753,000</b>	<b>301,725,000</b>	<b>304,592,000</b>

As will be seen from the above, our best customers are **Great Britain and Ireland**, to which countries we shipped in 1890 goods estimated at 137,5 million kronor, which means over 45 per cent of the aggregate value of our whole export. The principal articles thus shipped were timber and woodwork for 50 mill. kr., iron and steel for 22 mill., butter for 20,7 mill., grain for 6,9 mill., cardboard and paper

for 17,7 mill., matches for 3,7 mill., live animals for 2,5 mill., wood-pulp for 3,3 mill., fish for 5 mill., pork for 2,5 mill., and glass for 1,3 mill. kr.

Second on the list of our foreign buyers stands **Germany**, which in 1890 imported Swedish goods to the value of close upon 37 mill. kronor. Eight millions of that sum were spent on wood, and nearly the same amount on fish; six millions and a half were paid for iron and steel, and about four millions for matches, the greater part of which was reshipped to ports out of Europe, 2,6 mill. for stone, 2,1 mill. for cardboard and paper, and 0,5 mill. kr. for hides and skins.

**Denmark** occupies the third place on the Swedish export list and bought of us in 1890 goods for something over 33 mill. kronor. Amongst the articles bought timber and wood represented a value of 6,5 mill. kr., iron and steel 2,2 mill., wood-pulp 1,4 mill., pork and lard 1,4 mill., grain 1,2 mill., stone and bricks 1 mill., fish 0,9 mill., textile fabrics 0,6 mill., and steam engines and other machinery 0,5 mill. kronor.

In addition to the above the Danes in 1890 took of us cattle for over 6 mill. and butter for nearly 7 mill. kr., the greater part of which was reexported, principally to England.

After Denmark comes **France**, which in the year mentioned imported Swedish products for 24,4 million kronor, of which sum not less than five sixths were for wood, and of the remainder 2,1 mill. kr. for iron and steel, 0,7 mill. for wood-pulp, 0,6 mill. for grain, 0,3 mill. kr. for paper, and about the same amount for tar.

Our export to **Norway** amounted to 18 million kronor. Textile articles head the list with a value of nearly seven mill. kr.; fish stands at about one mill. kr., cardboard, paper and paperhangings at 0,6 mill., iron and steel at 0,9 mill., cattle at 0,7 mill., and soap at 0,5 mill. kr.

The Swedish trade with **Holland** and **Belgium** seems to be developing. These countries imported from Sweden in 1890 goods for a sum exceeding 27 million kronor, of which some 16 mill. went to the former and 11 mill. to the latter country. The chief articles were wood, valued at 16,5 mill. kr., wood-pulp, cardboard and paper 2,5 mill., iron and steel 2,6 mill., and zinc ore 1,3 mill. kr.

Sweden's export to **Spain** and **Portugal** reached a total of 8,5 million kronor, the latter country contributing to this amount less than one sixth. The articles exported were chiefly wood (4,9 mill. kr.), spirits (3,2 mill.), and iron and steel (0,4 mill. kr.).

**Finland** and **Russia** took of us in 1890 goods for 11,8 million kronor, of which amount iron and steel represent 3 mill. kr., machinery 1,3 mill., fish 1 mill., and steamers and other boats 1,1 mill. kr.

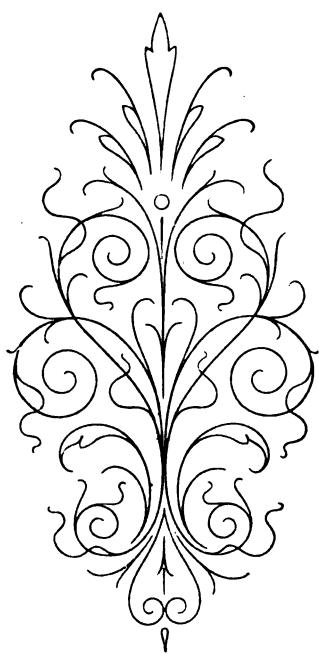
Our export to **Italy**, which in 1889 had reached a value of somewhat over one million kronor, in the following year dwindled down to less than one half of that amount, which was principally made up of old iron and wood.

The Swedish shipments to other European countries, not included above, were too insignificant to deserve any special mention here.

Outside Europe the **United States** of America in the two years preceding 1888 were our largest customers, but in that year they were eclipsed by **Australia**, which since then has imported yearly from Sweden goods for about 2 million kronor, whereas our exports to the United States, in 1890 for instance, only amounted to 0,9 mill. kr. We shipped to Australia principally wood, to the States iron and steel, and wood-pulp.

All that we have stated above deals with **direct** shipments from Sweden, which, as far as ports **outside** Europe are concerned, were never large and chiefly consisted of wooden goods. Other articles of Swedish origin, which have reached Africa, Asia, America &c., have done so after transshipment at some foreign, mostly English or German, port; whereby the fact is explained, that the U. S. A., for instance, put down their import of Swedish products at more than ten times the amount given by the Swedish official statistics.





# Agricultural Produce.







Sweden is an agricultural country. Although only a small percentage of its whole area has been brought under cultivation, it presents, in proportion to the number of the inhabitants, a larger arable area than most other European countries. The **Export** of Swedish agricultural produce has, however, until lately been comparatively small; it is only during the last two decenniums that, thanks to the large extension of the ploughable area and the cultivation of the same on a more rational system, coupled with a more intensive cattle farming, Sweden has had to enjoy a considerable and increasing export of agricultural products.

Amongst these products those coming from the dairy, especially **butter**, take the first place; after the same come grain, principally **oats**, and live stock, **hides**, **tallow** etc.

The Swedish dairy farming has in recent times made considerable progress, in fact so much that at this moment our butter can easily bear comparison with that of any other country. Many facts have contributed to this result: so for instance the invention made by a Swede — Dr de Laval — of a suitable milk separator and the general introduction of this useful machine into all parts of the country, the formation of dairy companies and the increased skill of the people occupied with butter and cheese making.

When the export of Swedish butter first commenced, all the butter went to Denmark, where it was repacked, branded with a Danish brand and thus as a Danish article sent into foreign countries, especially England. As, however, our export has grown in quantity, we have made ourselves more and more independent of the Danes, and the Swedish butter has now procured for itself a

prominent position on the English market. In order to protect and further the interests of our dairy farmers on that market, the Swedish Government has even appointed a special dairy agent, residing at Manchester, whose duty it is to report upon matters connected with the butter trade in England and who, as he is not permitted to transact business himself, draws his salary from Sweden. To show to what extent the export of swedish butter has gradually increased, we may mention, that, while this export in 1870 stood at about 2 mill. kg., it had in 1880 risen to 5 mill. and in 1888 to 15 mill. kg.

The Swedish **live stock** sent abroad consists mostly of cattle and goes to England, although a part of it is transshipped thither at Danish ports.

The export of Swedish **grain** has been rather varying from year to year, depending, of course, upon the quantity and quality of the crops gathered here and abroad. As before said, **oats** is the principal kind of grain exported, and most of it goes to England, to which country in 1888 we shipped 89 mill. kg., while about 50 mill. went to France and 25 mill. kg. to Denmark. **Barley** is the other sort of grain exported from Sweden, and the by far largest buyer of it is England. To that country we in 1888 shipped 23 mill. kg. out of a total of 25 mill. kg. exported; the other buyers were Denmark, Norway and Belgium.

A large field for a profitable disposal of the Swedish crops seems to have opened lately by their sale abroad as **seed corn**. It is a wellknown fact, that seedcorns springing from higher degrees of latitude are especially suitable for sowing in more southern countries, and societies have been formed in Sweden with a view partly of impressing upon the farmers the great importance of using only the very best and most carefully cleansed seed for sowing and partly of producing themselves for sale a seedgrain, of which they can guarantee an entire purity and a great germinating power. Even private Swedish firms have commenced working in the same direction, and it is to be hoped, that within a short time Sweden shall have acquired a large market abroad for its excellent seedcorn.



# Sören Bjerre, Gothenburg.

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## Butter Export Business.

(ESTABLISHED 1874)

Address for telegrams:

**BJERRE**, Gothenburg.

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*Carl Krüger & C:o,*  
*Gothenburg*  
(Sweden).

EXPORTERS OF BUTTER AND GRAIN,  
Packers of  
Preserved Butter in Tins.  
(Golden Cow Brand).

Telegraphic Address: *Carolsus, Gothenburg.*

Refer-  
ences: *Skandinaviska Kredit Aktiebolaget, Stockholm.*  
*Skånes Enskilda Bank, Malmö.*

# Swedish Pine Seed

(*Pinus Silvestris*)

and

# Spruce Seed

(*Abies Excelsa*),

to which have been awarded the only first prizes given at the  
Scandinavian Seed Congresses at Sundsvall 1882  
and Drontheim 1887, in addition to prizes at  
five International Exhibitions,

sold by

*Count Knut Posse,*

Bergqvara, Reppe,

S W E D E N.

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E. Öhman's Sons & C:o,

**STOCKHOLM,**

**NORRKÖPING, OXELÖSUND**

and

**VALDEMARSVIK.**

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Exporters of Grain, especially  
Oats, and of Seed Corn.

# Allmänna Svenska Utsädesföreningen

(The General Swedish Association for Agricultural Seeds)

## Svalöf, Sweden,

supplies excellent and choice Seed Corn of cereals and forage plants,  
amongst which the farmers' attention is specially directed to

Winter and Spring Wheat,

Winter and Spring Rye,

Oats, Barley, Peas and Vetches,

all of first rate quality, carefully selected and delivered under the  
control and seal of the Association.

Under the patronage of

His Majesty the King of Sweden and Norway,

The Swedish Royal Agricultural Academy,

All the Agricultural Societies of Sweden and

The most prominent Swedish landowners

an Experimental and Scientific  
Establishment for the production and  
improvement of Seed Corn

has been founded at Svalöf, and the  
Association has engaged several scientific  
specialists in the different branches connected therewith.

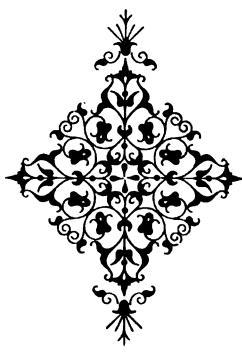
This establishment, the very first  
of its kind, has by a suitable combination  
of theory and praxis made a successful progress, and its products  
are day by day gaining more ground. The qualities of the Swedish  
Seed Corn, excellent by nature, have thus been highly improved by a  
most careful selection and cultivation.

Address for letters:

The General Swedish Association for Agricultural Seeds,  
*Svalöf, Sweden.*

Address for telegrams: **Utsädes, Svalöf.**





# The Timber Trade.

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The most important factor of the Swedish export business is the timber trade, the products of which are known almost all over the world. Thus in woodgoods the Swedes compete successfully with Canadian shippers in Brazil and other parts of South America; they nearly dominate this trade in Australia and the Cape; in New Zealand their brands are coveted, and lately shipments of Swedish wood have been made to India and the Gulf of Persia.

This supremacy is mostly due to our winters and rivers, which enable us to bring the logs from the forests to the shipping ports at a comparatively small cost. What we owe these our natural allies will be clearly understood, when we mention that in the interior of New Zealand there are vast tracts of land covered with pine trees, and nevertheless the owners of sawmills there, who are some 11,000 English miles nearer Australia than we, cannot compete with us in the Australian market, reduced as they are to the aid of railways for carrying the timber from the forests to the sea.

In Sweden we fell the trees in the winter, when the sap is down and they have ceased growing, and drag them over the snow to the riverside; afterwards at springtime, when the snow and ice commence melting, we throw the logs into the swelling rivers, on which they are borne down to the sawmills on the coast, without any material expense.

The wood principally exported from Sweden is **redwood** (*pinus silvestris*) and **whitewood** (*pinus abies*), the products of which can

be classified in **sawn goods and firewood; hewn timber and round wood; planed boards and joinery goods; staves and pitprops;** but before treating these classes separately we give below a few figures relating to the Swedish timber export as a whole during the last four decenniums, which clearly show how this business from a small beginning in that time has acquired considerable proportions.

The value of this export in 1849 amounted to 4,119,000 kr.

» 1859	»	»	8,542,000	»
» 1869	»	»	52,573,000	»
» 1879	»	»	75,238,000	»
» 1888	»	»	113,345,000	»

### *Sawn goods and firewood.*

Sawn goods are sold as **planks, deals, battens, scantlings, boards and planchettes**, the difference between the principal of these denominations being that

deals should be at least  $2\frac{1}{2}$ " thick by 9" wide,

battens 2" thick by 4" wide,

and boards 1" thick by 4" wide,

and they are sorted in different qualities, which in England are called **mixed, third, fourth and fifth quality** and in France **1<sup>ère</sup>, 2<sup>ième</sup>, 3<sup>ième</sup> and 4<sup>ième</sup> qualité**.

It is impossible to lay down exact rules for sorting the wood in the aforesaid qualities. Here, like everywhere else, a thorough knowledge of the different goods is necessary, especially when purchases are to be made for particular purposes.

To give an idea of the general falling of these qualities from the different Swedish export districts, we use the leading stocks at the sawmills as basis and arrive thus at the following figures:

	Mixed	thirds	fourths	fifths
The Haparanda district.....	3 %	25 %	50 %	22 %
» Hernösand—Sundsvall district	8 %	35 %	45 %	12 %
» Söderhamn—Gefle district....	10 %	40 %	40 %	10 %

The deals average as a rule in length 16/17 engl. ft.

battens » » » » » 15/16 » »

boards » » » » » 14/15 » » ;

the widths and thicknesses are **always** in English measure, but the lengths are crosscut to different measures, as ordered by the buyers or current at the place of destination.

Each shipper has his registered brands for the different qualities painted in red at the ends of the goods, not only as a distinction from other brands, but also to prevent the goods from being crosscut in transmission.

The prices of sawn goods are quoted per St. Petersburg standard of 165 cubicfeet.

Ends for stowage of 6 to 8 feet are always sold at two thirds of the price.

In adapting the sawn goods to different lengths and sorting it, the shippers obtain a large quantity of ends from 1 foot and upwards to  $5\frac{1}{2}$  feet, advancing by 6 inches. This kind of wood is called **firewood** and is shipped in large quantities, principally to England.

It has to be even at the ends and free from rot, and is used partly, split in bundles, for lighting fires, partly (the longer lengths) for the manufacture of boxes.

The firewood is sold per fathom of 216 english cubicfeet.

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### *Planed boards and joinery goods.*

Planed boards and joinery goods of all descriptions, from mouldings, doors and furniture to complete houses, form an important feature of our timber trade, and, on account of the lightness and thorough seasoning of the wood as well as the excellent machinery used in its conversion, these articles of Swedish make are unequalled and have met with a large and steadily increasing demand at home and abroad.

Shooting boxes on the Scottish moors, light and portable villas on the Riviera, herdsmens huts on the prairies of Australia and

New Zealand, all these bear witness of the perfection this branch of the Swedish industry has attained.

The houses can without difficulty be taken to pieces and removed from one place to another, the different parts of the same being interchangeable and besides numbered, and, when shipped, they are packed so as to occupy a minimum of space.

Articles belonging to this industry, which have obtained a deserved attention, are schoolmaterials, not only desks and chairs etc. of improved patterns, but also gymnastic appliances, especially those adapted to the Ling system, which has to its principal aim the harmonious development of all parts of the human body.

Flooring boards were until lately sorted in *first* and *second quality*, but they now occur even in *3<sup>rd</sup>* and *4<sup>th</sup>* qualities. The price is quoted per nominal St. Petersburg standard of 165 cubic feet, that is to say, the boards are quoted for as they are before being dressed, which latter procedure reduces the thickness by  $\frac{1}{16}$ <sup>th</sup> to  $\frac{1}{8}$ <sup>th</sup> and the width by  $\frac{1}{4}$ <sup>th</sup> of an inch, depending upon the machinery used.

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### *Hewn timber and round wood.*

Hewn wood consists of timber and balks.

The dimensions of timber are 9 inches and upwards square by 18 feet and upwards in length, averaging pr log 26/27 cubic feet and more up to 35/40 cub. ft.

Balks are 6 to  $8\frac{3}{4}$  inches square by about the average lengths of the timber.

The export from Sweden of this kind of wood has been decreasing lately, owing partly to the difficulty experienced in obtaining suitable stuff here and partly to the increased importation to Europe of pitch pine from the southern part of the U. S. A.

Round wood is principally made up of the so called Dutch timber, mostly whitewood, which is exported to Holland and used there for piling canal banks, piers etc. as well as for sawing up by the windmills existing there.

The sizes are 10 inch (Dutch measure) diameter and upwards in the top by lengths of even Dutch feet (16, 18, 20, 22, 24 etc.).

In the export of this article too a noticeable falling off has taken place, which is accounted for by the fact that the Dutch sawmill owners find it more and more to their advantage to import finished goods, the same being of better manufacture, and, when the extra freight for the raw material is taken in consideration, even cheaper.

Other round timber consists of spars for masts, scaffolding and hop poles of all dimensions, richers, oars etc. — Of late a trade has sprung up in so called pulpwood for the manufacture of wood pulp; it is exclusively whitewood and of about the following dimensions: top 4" to 12" by lengths of 6 feet and upwards.

The price of Dutch timber is quoted on the basis of one dozen of 10/11  $\frac{3}{4}$ " inches diameter in top by 24 feet in length.

For other dimensions of square and round timber the price is given pr load of 50 cubic feet, if square, and 40 cubic feet, if round.

---

### *Staves and pitprops.*

Of late years the attention of the owners of sawmills has been fixed upon turning to better account the great quantities of surface boards and longer ends of deals, battens etc., that naturally accumulate at the mills, and which previously were exported as firewood or used up at home in the manufacture of charcoal.

The result has been that stavecutting machinery is now to be found at nearly every sawmill of importance, and that several companies have been formed with a view of buying up the stuff in question and making of it partly material for boxes, partly ready made articles of several kinds.

As a natural consequence the export of firewood is decreasing in those districts, where these new industries have sprung into life.

Staves are principally shipped to England, where they are made into cementcasks and packing materials for chemicals and piece goods.

They are sold per St. Petersburg standard of 165 cub. ft. or per mille of 1200 pieces; the latter mode of selling being mostly used by retailers.

Another product of our forests is pitprops, which are going in large quantities to foreign coal exporting ports, especially those of England and Scotland.

Also birch- and alderprops are shipped from Sweden to England and Scotland, where they are used for the manufacture of clog soles, hammer handles, brush backs, bobbins etc.

The dimensions of pitprops run in diameter from 3" in the top and upwards, and, with regard to the lengths, these are adjusted as ordered by the buyer, if they are between 3 to 6 feet; if longer, an average length is generally prescribed.

Pitprops are sold per 72 or 100 running feet.



# **AKTIEBOLAGET ANKARSRUMS BRUK,**

**ANKARSRUM, SWEDEN.**

**MAKERS AND EXPORTERS**

OF —————

**DEALS, BATTENS AND BOARDS,**

MARKED A. B. A M S B.,

AND OF —————

**BALKS AND SMALLER SQUARE**

**TIMBER; SPARS, MASTTREES, STAVES**

AND OTHER PRODUCTS OF THE FOREST.

**Aktiebolaget Bergman Hummel & C<sup>o</sup>,**  
NEDERKALIX.

**Aktiebolaget Bodträskfors,**

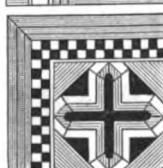
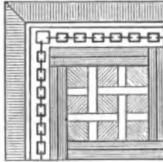
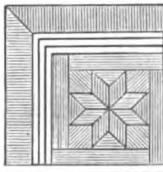
CARLSVIK pr LULEÅ.

Exporters of

**DEALS, BATTENS, BOARDS, LATHS, STAVES  
and FLOORINGS.**

	Firsts 30 %	Seconds 70 %	Thirds (fifths) falling
NEDERKALIX .....	B H & C <sup>o</sup>	B * H	H B H
CARLSVIK & LULEÅ	L A B.	L C B.	L D B.

*Ports open between June—October.*

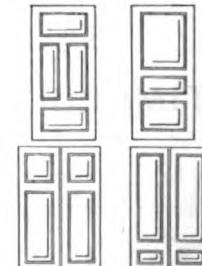


MANUFACTURERS

OF

## PARQUETRY FLOORS

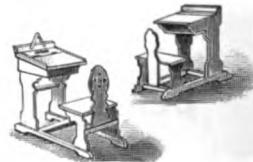
in oak of different designs.  
Large stock always on hand.



DOORS, ARCHITRAVES,  
SASHES and MOULDINGS

of all dimensions.

SCHOOLDESKS.  
SCHOOLMATERIAL.



Established 1858.

Established 1858.

# Ekmans Mechanical Joinery Works Co, Lim<sup>d</sup>.

D e p o t:

LONDON, 33 Wharf Road, City Road, LONDON.

# AKTIEBOLAGET EKMANS MEKANISKA SNICKERIFABRIK,

STOCKHOLM.



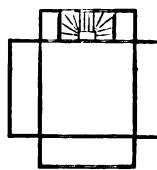
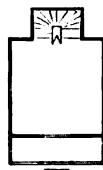
Wooden houses and fittings of joinery for  
the same sold and delivered to all ports.

The Company's patent system of joining the different  
parts of the houses has everywhere met  
with deserved attention.

**Makers**  
of  
Houses for  
hot  
and  
cold climates,

**WORKMANS  
COTTAGES,**  
**SUMMER  
HOUSES,**  
**KIOSKS,**

**BALCONIES,**  
**BATHING-  
HOUSES.**



**Speciality:**  
**EXPORTVILLAS**  
of the  
Company's  
own patent,  
easily transpor-  
table and  
well adapted  
for  
**Watering Places,**  
**Shooting-  
Lodges,**  
**Emigrants**  
and  
**Colonists**  
etc.

Ekmans Mechanical Joinery Works Co, Lim<sup>d</sup>,

STOCKHOLM.

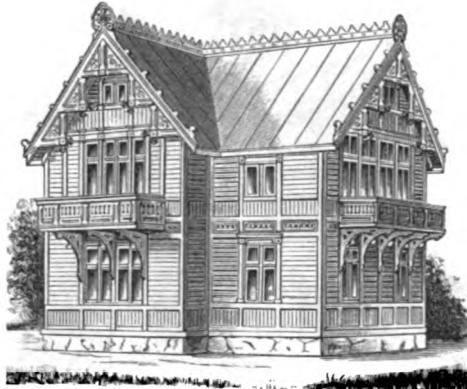
Depot:

LONDON, 33 Wharf Road, City Road, LONDON.

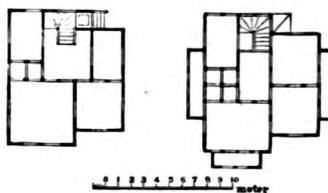
AKTIEBOLAGET EKMAN'S MEKANISKA SNICKERIFABRIK,  
STOCKHOLM.



MANUFACTURE,  
ON COMMAND,  
**BARRACKS,**  
EASILY  
TRANSPORTABLE  
AND SUITABLE  
FOR  
MILITARY  
CAMPING PURPOSES  
AND AS  
HOSPITALS.



MANUFACTURE  
PAVILIONS,  
SUITABLE AS  
**RESTAURANTS,**  
AND ALL KINDS  
OF  
**FURNITURE,**  
REQUIRED FOR  
THE SAME.



Ekmans Mechanical Joinery Works Co, Lim<sup>d</sup>,  
STOCKHOLM.  
Depôt:  
LONDON, 33 Wharf Road, City Road, LONDON.

AKTIEBOLAGET EKMAN'S MEKANISKA SNICKERIFABRIK,  
*STOCKHOLM.*

N<sup>o</sup> 202.



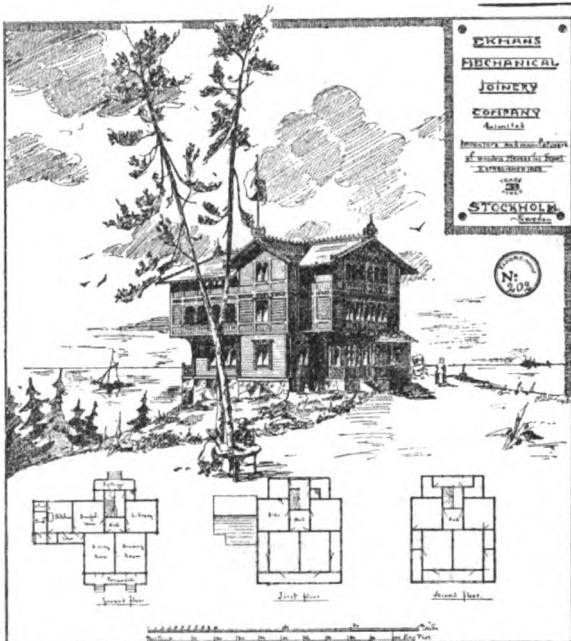
Telegraph Address:

Ekmans Bolag,  
Stockholm.

Universal "ZEBRA" Code used.

Please apply direct  
to the Company for  
information about

Wooden Houses.



N<sup>o</sup> 212.



PRIZE MEDALS

AWARDED:

Gold, Paris ..... 1878.  
" Madrid ..... 1882.  
" Valencia .... 1883.  
" London ..... 1884.  
" Buenos Aires 1890.  
Silver, Vienna ..... 1873.  
" Cape Town 1877.  
" Malmö ..... 1881.  
" Copenhagen 1888.  
" Vienna ..... 1891.

Wooden Houses

are liked everywhere,  
and healthy to inhabit.

Ekmans Mechanical Joinery Works Co, Ltd, Stockholm.  
Branch Office for the United Kingdom since 1892: 88 Bishopsgate Street Within, London, E. C.

WILLIAM EKMAN MECHANICAL JOINERY WORKS  
STOCKHOLM, SWEDEN

Export House No. 238



STOCKHOLM,  
*Sweden.*

Established

1858.



Works rebuilt  
and enlarged

1892.

Wooden Houses,  
made by  
this Company,  
have been  
exported to and  
erected in nearly  
all parts of  
the World.

*Strong,  
Durable,  
Light,  
Portable.*

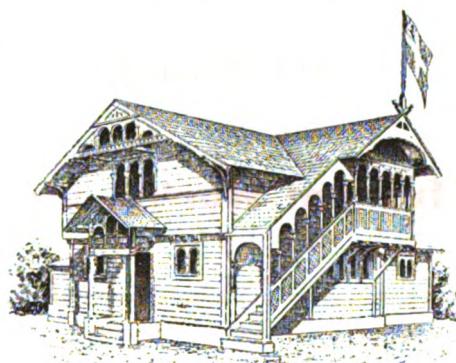
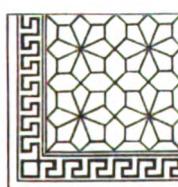
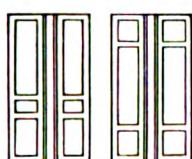
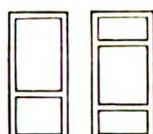
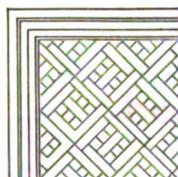


Ekman's Mechanical Joinery Works Co., Limited, Stockholm.  
Branch Office for The United Kingdom since 1892: 88 Bishopsgate Street Within, London, E.C.

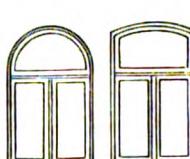
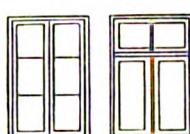
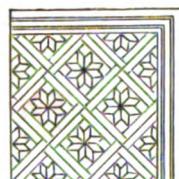
**RÄKTIEBOLAGET**

**J.O. WENGSTRÖMS  
MEKANISKA SNICKERI FABRIK  
STOCKHOLM**

PAVILIONS,  
BATHINGHOUSES,  
BALCONIES.

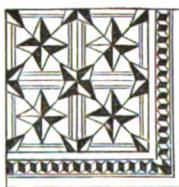


VERANDAS,  
DWELLINGHOUSES,  
KIOSKS.



— MANUFACTURERS —  
OF  
**PARQUETRY FLOORS**  
OF OAK, OF DIFFERENT DESIGNS,  
— DOORS, WINDOWS,  
ARCHITRAVES, SASHES,  
SKIRTINGS, MOULDINGS.

The J. O. WENGSTRÖMS  
MECHANICAL JOINERY  
WORKS C:o, LIM:d.



Teleg:address: WENGSTRÖMS, STOCKHOLM.

# Aktiebolaget Öfverums Bruk, ÖFVERUM.

## JOINERY GOODS:

WINDOWS, DOORS, PANELS, MOULDINGS, ARCHITRAVES and FLOORING BOARDS,  
PLANED, TONGUED and GROOVED.

## DEALS, BATTENS AND BOARDS, red and white, of all dimensions.

PLEASE ADDRESS LETTERS:

BRUKSKONTORET, Öfverum.

AND TELEGRAMS:

SCHWARTZ, Gamleby.

## The Ofverum Works, Limited, ÖFVERUM.

*Shantz & C<sup>o</sup>,*

Stockholm and London,

Shippers of

Swedish Deals, Battens

and Boards

from

Stockholm, Gefle, Sundsvall, Oxelösund  
&c. &c.

Gust. Sam. Hrfvidson,

in STOCKHOLM.

*Exporter of*

Woodgoods, sawn and planed,

(deals, battens and boards)

— from —

Kåppala Ångsåg,

near Stockholm.

The quality of the wood bears comparison with  
the production of the Gefle district.

---

**BARK & WARBURGS AKTIEBOLAG,**

**GOTHENBURG, SWEDEN.**

— ♫ RECONSTRUCTED IN 1888. ♫ —

Manufacturers and Exporters

— ♫ of ♫ —

Floorings, Mouldings, Doors,  
Windows, Sashes and Architraves  
of every description.

Correspondence solicited.

Telegraphic address:

**BARKWARBURG,**

*Gothenburg.*

L. G. Bratt & C:o,

— GOTHENBURG. —

Exporters of

Deals, Battens & Boards

— and of —

Wood Pulp.

G. E. BROMS,  
STOCKHOLM.

EXPORTER OF  
**DEALS, BATTENS and BOARDS**

at the *WESTERVIK* district  
(South east of Sweden).

BRANDS:

Mixed	Thirds	Fourths	Fifths
E  B $\frac{10}{15}$ %	E ★ B $\frac{25}{35}$ %	E + B $\frac{40}{50}$ %	E - B $\frac{10}{20}$ %

Unsorted.

G. E. B.

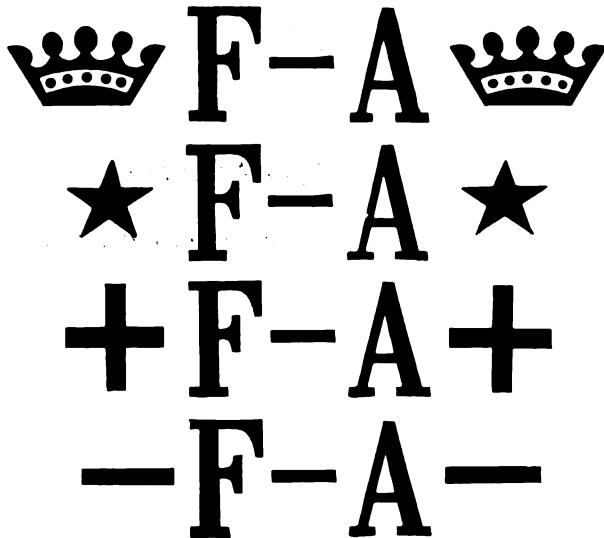
Ports open April—December.

# FERNA JERNBRUK, FERNA.

(Westmanlands län, Sweden.)

*Eriksberga af*  
**DEALS, BATTENS and BOARDS**

of the best quality and the  
annexed marks:



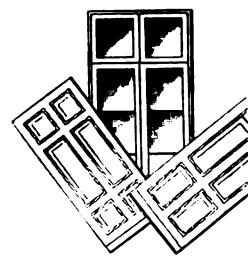
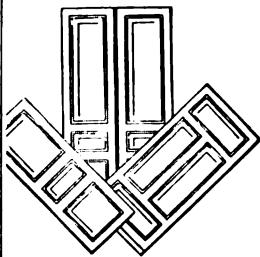
Manufacturers

— of —

Doors, Architraves, Sashes,

Mouldings and Wooden Houses

of all dimensions.



Ge H. HEGARDT & CO;

— Gothenburg. —

Exporters

— of —

*Deals, Battens, Boards  
and Floorings.*

Registered Marks:

	Mixed	3:rds	4:ths	5:ths
Deals, Battens & Boards	H C <sup>o</sup>	S Ø B	A.W.	Q
Floorings	H ★ C <sup>o</sup>	S Ø B	A.W.	Q

Port: Gothenburg.

Axel K. Hummel,

WEKHO.

EXPORTER OF  
Deals, Battens, Boards,  
Floorings, Staves and Laths.

Shipping port: KARLSKRONA.

Registered Brands:

Mixed	Thirds	Fourths	Fifths
K O  ST	K O ★ ST	K O ST	K O S

Unassorted:

K OSTA

Annual production: *about 3,000 Standards.*

# JOHANNESVIKS AKTIEBOLAG,

SUNDSVALL.

OWNERS OF  
*The Johannesvik Sawmills*  
with harbour

— and —

*The Nacka Sawmills and Planing-Works*  
with harbour.

Exporters of

TIMBER,  
hewn and sawn;

BALKS and SPARS;  
Deals, Battens, Boards and Scantlings,  
rough or planed and moulded.

BRANDS:

Mixed	=	J	AB
Thirds	-	J	+ AB
Fourths	=	J	- AB
Fifths	=	J	○ AB

# KJELLBERG & C<sup>o</sup>,

STOCKHOLM.

Exporters of WOOD and IRON.

REGISTERED BRANDS:

**Wood.** Deals, Battens and Boards.

	Mixed	Thirds	Fourths	Fifths	Sixths
Bollsta, <i>Hernösand.</i>	Bollsta	H+G	B+B	B+B+B	B+B+B+B

Stocka, <i>Hudiksvall.</i>	S	○ A	SXXA	SXA	S <sup>nd</sup>	xT×
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**Iron.**

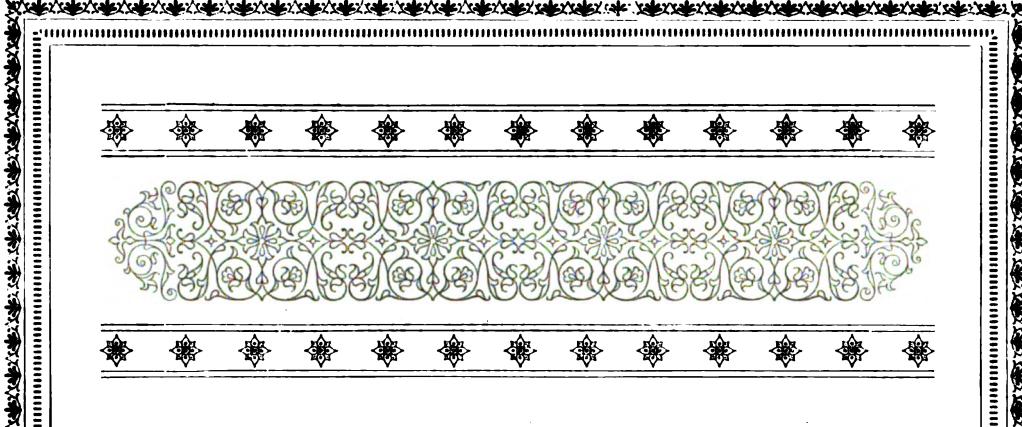
Bollsta.

Pig Iron

Bar Iron

B (XII)

C



J. A. Kjellberg & Söner,  
Gothenburg, Sweden.

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Exporters of WOOD

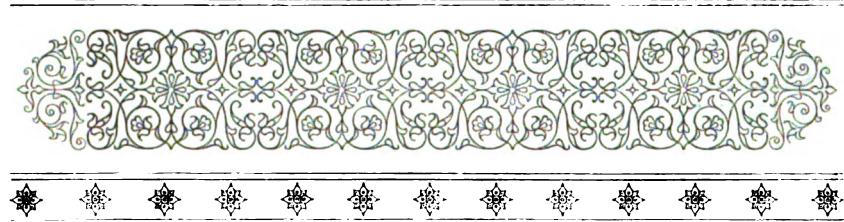
from **Kramfors** per *Hernösand*:

**DEALS, BATTENS AND BOARDS.**

Registered brands:

Mixed	3:ds	4:ths	5:ths	6:ths	Unsorted
L <u>w</u> O & KRAMFORS	L O	W * W	W	W M W	K <u>w</u> S

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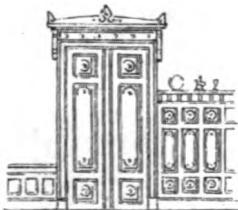
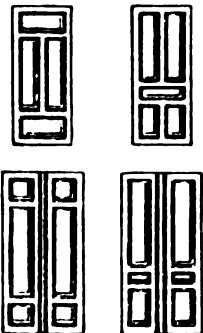




*Ligna*  
Nya Snickeri-Aktiebolag,  
Stockholm.

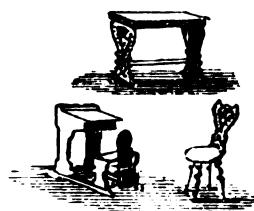
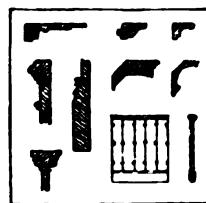
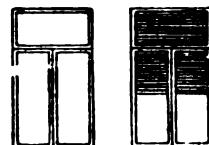
**Silver Medal**

Hâvre 1887.



**Gold Medal**

Paris 1889.



MANUFACTURERS  
OF  
SCHOOL FURNITURE,  
DOORS,  
WINDOWS,  
MOULDINGS,  
SOCLES,  
FENCES,  
GATES.

*The New Ligna Joinery Co., Lim.,  
Stockholm.*

# Ljusne-Woxna Aktiebolag,

—\* LJUSNE (SWEDEN). \*

Owners of THE LJUSNE SAWMILLS with harbour;

Manufacturers of  
**SAWN WOODGOODS**

(Deals, Battens and Boards).

**FLOORINGS AND FIREWOOD.**

*Shipping port: Ljusne, near Söderhamn.*

Brands of Sawn Wood:

Red wood.

Mixed,

Thirds. Fourths and Fifths.

White wood.

W K, WK, K, K K, W .

or  
W H K

or

**N. B.** All sales of the above mentioned woodgoods effected by

**WILH. H. KEMPE,**  
STOCKHOLM,

to whom all enquiries should be addressed.

# Sw. Renström & C:o,

GOTHENBURG.

ESTABLISHED 1816.

*Exporters of woodgoods, viz.*

DEALS

— AND —

BATTENS

— &c. —

# Stora Kopparbergs Bergslags Aktiebolag,

Stockholm.

Owners of the

## SKUTSKÄR SAWMILL AND HARBOUR,

Manufacturers and Exporters of  
Sawn Woodgoods (Deals, Battens and Boards), Floorings,  
Mouldings, Staves and Firewood.

Shipping port: *Skutskär near Gefle.*

Brands of              Mixed              Thirds              Fourths              Fifths  
Sawn Wood:            SKB              DOM              DM              D★M.

## GUSTAF WALL, K GOTHENBURG.

Exporter of  
**WOOD PULP, MECHANICAL**

(dry and wet, white and brown)

— and —

**CHEMICAL**

(Sulphite and Soda)

— and of —

**WOOD PULP BOARDS;**

**SWEDISH CHARCOAL IRON (Norway Iron).**

SPECIALITY: Wire, Rivet and Nail Rods, Blooms, Rough Bars  
and Pigiron of choice brands;

**DEALS, BATTENS and FLOORINGBOARDS,**

Mixed              Thirds              Fourths              Fifths



**MARKS: WALL G.A.W. W+E+B W+B.H.**

Correspondence solicited.

# Svartviks Aktie-Bolag,

— GOTHENBURG. —

Owners of

## *Saw Mills and Planing Works.*

Exporters of

## Deals, Battens, Boards & Floorings.

Yearly production: **about 40,000 Standards.**

*Shippers:* JAMES DICKSON & C:o, Gothenburg.

*London-house:* DICKSON BROTHERS & C:o,  
6 Moorgate Street, E. C.

*Shipping ports:* SANDARNE in the Söderhamn district.

SVARTVIK      »      Sundsvall      »

HOLMSUND      »      Umeå      »

### REGISTERED MARKS:

For unplanned Wood.

For Floorings.

To England	To the Continent	To England	To the Continent
Mixed or I <sup>mo</sup>	D B & C <sup>o</sup>	J D & C <sup>o</sup>	I <sup>st</sup> qual. D B & C <sup>o</sup>
Thirds or II <sup>mo</sup>	D D D	D D D	2 <sup>nd</sup> , J D & C <sup>o</sup>
Fourths or III <sup>mo</sup>	D	D	3 <sup>rd</sup> , D D D
Fifths or IV <sup>mo</sup>	M F D	M F	4 <sup>th</sup> , D D F



SÄFVENÄS, GOTHENBURG.

*Manufacturers and Exporters of*  
DEALS, BATTENS, BOARDS,  
FLOORING AND MATCHING BOARDS.

**Registered Brands:**

	Mixed	Thirds	Fourths
Deals, Battens & Boards	S  F	S.Ä.F.	F.Ä.S.
	1:st	2:nd	3:rd
Floorings & Matchings	S  F	S.Ä.F.	F.Ä.S.

*also Manufacturers of*  
WINDOW SASHES, BOXES,  
ARCHITRAVES, CASE BOARDS,  
MOULDINGS, LATHS.

*Telegraphic address:*

**SÄFVENÄS,**  
*Gothenburg.*

# The Iron and Steel Industry.







Sweden was of old famous for its excellent iron, and the Swedish iron industry has been continuously progressing with regard to so well the quality of the iron as the quantity produced, but as the production has not been augmented to the same extent as in other iron producing countries, it can hardly be denied, that Sweden does not now occupy the same prominent position it held, before fossil coals were introduced as fuel for iron making.

The reason of this is to be attributed to natural causes, which have made it impossible for Sweden to develop its iron industry with the same rapidity as many other more thickly populated countries, provided with rich coal mines.

The expectations, cherished by a great many, that the Swedish iron industry by means of the Bessemer process should be able to recover its old predominant position have now materially faded, since it has been shown, that even Bessemer metal can be produced in other countries at a much smaller cost than here. On the other hand it must, however, be admitted, that in no other country Bessemer steel of such excellent quality can be produced as in Sweden.

The quality of the Swedish iron, far from having in course of time deteriorated, has, on the contrary, by improved refining processes become more homogeneous and uniform than before; and as to the quantity, the production has nearly doubled during the last quarter of a century. The export of Swedish iron has also increased in about the same ratio, although it must be added, that

with few exceptions we have not exported this metal in any other form than pigs, blooms, bars, nail and wire rods, and steel.

In other words, it has chiefly been as a kind of raw material and as steel, that the Swedish iron has made its appearance in the foreign market, and the manufacture of finished articles has not until lately been sufficient to supply even the home requirements.

The Swedish iron is celebrated for its purity, superior to that of the majority of foreign kinds of iron, which latter contain more phosphorus, sulphur, silicon and slag, and it has in consequence thereof been considered as almost indispensable for certain purposes. For the best steel and certain other manufactures, such as horse shoe nails, several kinds of wire, some parts of agricultural implements &c., Swedish iron has been for a long time almost exclusively used. It has also been found the best and most suitable iron for all kinds of forge work, as no other iron can stand such different heats. The only reason, why it is not at present in universal use even for simple purposes, is that it is too expensive.

The consequence of this is, that the market for Swedish iron, under ordinary circumstances, of necessity is very limited. An increased production woud evidently cause a fall in prices, because, to obtain a sale for the surplus, the iron would have to be tendered for purposes, which do not necessarily require so good a material and will not fetch such a high price.

We must also bear in mind, that for bringing about a larger iron industry it is not enough to have rich mines; such an industry depends greatly upon the abundant supply of fuel necessary for the smelting of the ore, and the want of such fuel of good quality, in sufficient quantities and in the vicinity of the mines, is the principal check upon the Swedish iron industry, fossil coals being only found in small quantities and of inferior quality in the south of Sweden, too far from the mining districts to be of any practical use to them. For our iron manufacture we are thus reduced to the use of charcoal and imported coals.

If it be a fact, that an iron industry is difficult to work even in a country, well provided with coal mines, should cheap and suitable communication be wanting, it is so much the more

so, where fuel has to be taken from the forests, extending over vast areas, and whereas it is an easy matter, for instance in England and Belgium &c., to connect a coalpit with an iron mine, it is a very difficult and expensive undertaking to cover distant tracts of forests with railway lines, to bring the two products together, which must be the case in a country like Sweden with an area of 440,000 square kilometers and a population of little less than five millions of inhabitants.

The chief products of the Swedish mining industry are iron ore, pigs and blooms, hammered and rolled bar iron, and steel.

The production of iron ore, obtained from about 700 mines, amounted to

1884.	1885.	1886.	1887.	1888.
909,553	873,362	872,479	903,186	956,343 tons of 1000 kg.,

but of this only a small part was exported. 1888 an export on broader basis has, however, commenced from the rich Gellivara mines, situated in the north of Sweden, which export promises to assume large dimensions, as the supply of ore seems to be nearly inexhaustible and the access to the mines has been made easy by a newly constructed railway.

Some of the ores there contain a great deal of phosphorus, whereas others are rather pure, and as they hold about 70 % of iron, the Gellivara ore should be able to advantageously supplant the Spanish ore, in case it be true, as has often been stated, that the Spanish mines will soon be exhausted.

Most of the Swedish pig iron is used for refining into wrought iron by the so called Lancashire method, and as a pig iron, as free as possible from silicon and sand, is required for that purpose, it is cast in moulds to broad and flat pigs.

The fracture of these pigs is generally more or less white, and such iron generally contains about 4 % of carbon, 0.2 to 0.4 % silicon, 0.01 to 0.06 % phosphorus and 0.01 to 0.03 % sulphur.

Of course, Swedish pig iron is used too for Bessemer and Siemens-Martin or open hearth purposes, and also for castings of extra strength, but for common castings English and Scotch pig iron is preferred.

The production of Swedish pig iron in about 170 furnaces has for the last quinquennium been as follows:

1884.....	430,534	tons of 1,000 kg.
1885.....	464,737	" "
1886.....	442,457	" "
1887.....	456,625	" "
1888.....	484,310	" "

Of which was exported:

1884.	1885.	1886.	1887.	1888.
54,426	47,527	58,139	49,285	49,099
tons of 1,000 kg.				

As stated above, the Lancashire hearth is mostly used for refining pig iron into wrought iron, and the iron thus obtained is hammered into blooms, which are put into reheating furnaces and then rolled or hammered into bars.

During the last twenty years several rolling mills have also been erected, by the aid of which the wrought iron, obtained in the Lancashire hearth, after only a short hammering is rolled almost immediately into blooms, and then used partly as billets for the manufacture of nail and wire rods, and partly for the production of crucible cast steel. As a rule, however, the blooms are allowed to cool before being reheated in the gasfurnaces, especially adapted for this purpose, to be ultimately hammered or rolled out into bars.

Beside this Lancashire method, another is used, especially at smaller works, in the neighbourhood of which no rolling mills are to be found, we mean the so called Franche-Comté method, which in point of fact is about the same as the former one, with the exception that the reheating of the blooms takes place in the Franche-Comté hearth itself and not in a special gasfurnace.

The Bessemer method, by which a compressed blast through a large number of small holes is forced through melted pig iron, has ever since its existence been employed in Sweden, and it is very doubtful, whether the same would had arrived at its present high state of development, had not a Swede — Mr G. F. Göransson of Sandviken -- immediately on the publication of the letters of patent granted Henry Bessemer, decided upon exhausting experiments.

Thanks to these and to the use of ores, almost free from phosphorus as well as in other respects suitable, a perfect Bessemer metal was obtained at an earlier date in Sweden than in England, it being thus proved beyond doubt that only materials, containing the smallest possible percentage of phosphorus, could be employed for the purpose in question.

As is well known, two Englishmen, Thomas and Gilchrist, have afterwards invented a completion of the Bessemer process, by the means of which phosphoric ores can be used to advantage, but this new process is nowhere in use in Sweden.

We have now only to mention one more method for the production of iron and steel, i. e. the Siemens-Martin process, the principle of which is to add scraps of wrought iron or steel and rich ore to pig iron, smelting in a regenerative gasfurnace, thereby regulating the temper of the product.

The yearly production in Sweden of wrought iron and steel during 1884—88 can be seen from the following figures:

	1884.	1885.	1886.	1887.	1888.
Bar iron and rods.....	264,944	257,369	237,130	255,383	253,087
Bessemer iron and steel	53,123	52,021	54,121	68,199	68,619
Siemens-Martin iron and steel .....	19,354	26,743	22,361	41,898	44,712
Other kinds of steel...	1,764	1,786	1,749	1,468	1,205
Plates.....	17,534	16,494	13,579	12,394	19,701
Nails.....	9,720	10,577	10,289	10,239	10,683,

of which the export is represented by the statistics as having consumed the following quantities:

	1884.	1885.	1886.	1887.	1888.
Ingots .....	232	3,175	4,110	4,526	6,449
Blooms.....	8,455	8,831	10,579	10,684	14,536
Bars.....	197,104	177,316	165,067	193,738	188,005
Bar ends .....		2,640	2,939	3,022	2,994
Wire rods .....		4,201	5,375	5,589	1,962
Plates.....	2,416	3,350	3,170	3,640	5,786

tons of 1000 kg.

# AKTIEBOLAGET ANKARSRUMS BROK,

ANKARSRUM, SWEDEN.

—\* Makers and Exporters \*

— OF —

## WIRE RODS, NAIL RODS

AND ALL KINDS OF ROLLED

## BAR IRON

OF THE FOLLOWING BRANDS:



Hg, AM, dM,



T-t, Wk, &c.;

## HAMMERED and ROLLED STEEL,

BRANDED:



## PROJECTILES and CASTINGS

of chilled iron (gun pig iron) and of Siemens-Martin steel;

## RAILWAY MATERIALS:

Crossings of steel and chilled gun iron, Crossing Levers, Turntables, Wheels &c.;

## CASTINGS for BUILDINGS

::::: AND ::::

## For IRON and WOOD WORKING MACHINERY,

such as Columns, Pillars, Rolls, Rolling Mills, Turbines, Saw Mills and  
Grinding Mills;

## CASTINGS for THE IRONMONGERY TRADE:

Kitchen Grates, Ranges, Stoves, Calorifères, Pumps &c.;

## ENAMELLED CASTINGS,

such as Kitchen Utensils, Sanitary Wares &c.

Aktiebolaget  
**Bofors—Gullspång,**

BOFORS, SWEDEN.

Specialities:

Ordnance, Military Carriages, Shells etc.

Steel Castings

of every description and up to a weight of 10 tons.

Rolled and hammered Steel

of the highest quality.

Steel Sheets.

*Orders and enquiries to be addressed to*  
the Bofors—Gullspång Company, Lim.,  
*BOFORS, Sweden.*

# AKTIEBOLAGET FINSPONGS

## STYCKEBRUK, FINSPONG \* SWEDEN.

— MANUFACTURERS OF —

GUNS and PROJECTILES of CASTIRON,

— Made from the —

FINSPONG WORKS' own famous GUN PIGIRON;

GUNS and PROJECTILES of SIEMENS-MARTIN STEEL,

equal to the very best foreign makes;

OTHER ARTICLES of SIEMENS-MARTIN STEEL,

— \* Such as Parts of \* —

MACHINERY, SCREWS (PROPELLERS), GUN MOUNTINGS,

RAILWAY WHEELS etc.;

STEEL, ROLLED and FORGED:

— → AXLES, GOODS for GUN BARRELS, MINING TOOLS etc.; ← —

IRON, ROLLED and HAMMERED,

LANCASHIRE as well as SIEMENS-MARTIN;

CASTIRON GOODS of all kinds;

—→ P I G I R O N, ← —

of special qualities, viz. suitable for general

CASTINGS and for FORGING and MALLEABLE purposes.

Aktiebolaget Öfverums Bruk,  
Öfverum, Sweden.

Manufacturers and Exporters of  
PIGIRON, made by charcoal:

strong, brand , suitable for machinery goods,

extra strong, brand , suitable for chilled rolls,

PIG-IRON, for malleable castings, white  and grey ,

PIG-IRON, for making steel, branded , etc.

BLOOMS and HAMMERED BARS

of best quality, branded .

Please address letters:

Brukskontoret, Öfverum.

and telegrams:

Schwartz, Gamleby.

The Öfverum Works, Limited,  
Öfverum.

# ALRUTZ & CO,

STOCKHOLM

• • • AND • • •

LONDON.

Agents and Shippers of all kinds of

## SWEDISH CHARCOAL IRON AND STEEL.

Joh. Sam. Billing & Son  
STOCKHOLM

Exporters of Swedish Iron.

Chief Brands:



HAB



B 00



AH

M



CN

W 28 B

Brands:

**EIK A&C  
CAH**



# Björneborgs Bruk,

Björneborgs Station, Sweden.

Blast Furnaces and Steel Works.

MAKERS OF

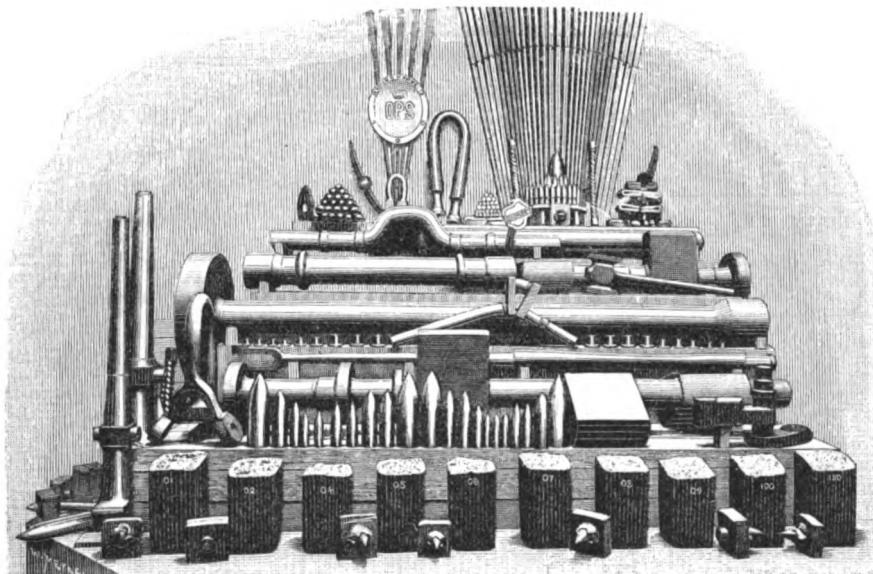
## STEEL FORGINGS,

AXLES, CRANK SHAFTS, PISTON RODS &c.,

AND OF

**TOOL STEEL** of superior quality;  
**MINING, QUARRY** and **CONTRACTORS' TOOLS**,  
and **STEEL INGOTS** of all tempers.

Speciality: **PROJECTILES**, finished and unfinished, of the very best quality, as supplied to the Swedish and other European Governments.



### Best Charcoal Pig Iron

for Bessemer, foundry and smithy purposes.

Orders and enquiries to be addressed to the **Björneborgs Bru** direct, as per the above address, or to their Agents,  
**D. Hald & Cie**, Stockholm.



D. Hald & C:o,  
ENGINEERS,  
STOCKHOLM.

Agents to the BJÖRNEBORG'S BRUK  
(Please see the preceding page).

Manufacturers of  
Complete Sets of Machinery

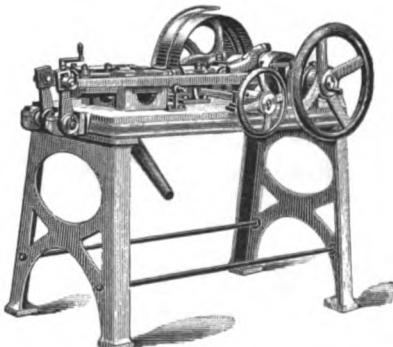
for the manufacture of  
**Bullets and Ammunition**

— for —  
Fire Arms

on the newest systems in use.

Telegraphic Address:

**H A L D,** Stockholm.



Bullet Machinery delivered to the Governments of Sweden and Norway, and of Spain, and to Ammunition Factories in Germany and other countries.

# L. G. BRATT & C:o, GO THENBURG.

EXPORTERS OF SWEDISH IRON AND STEEL OF ALL DESCRIPTIONS.

SUPERIOR QUALITY, BESSEMER AND SIEMENS-MARTIN,  
FOR WIRE, TOOLS, SPRINGS, TUBES,  
AGRICULTURAL IMPLEMENTS and HORSE SHOE NAILS.  
CHARCOAL IRON, ORDINARY, HAMMERED AND ROLLED,  
AND SUPERIOR FOR CRUCIBLE STEEL.  
PIG IRON FOR ALL PURPOSES.

*HORSE SHOE NAILS, READY FOR DRIVING.*

## Cassel, Hafsten & C:o,

— Gothenburg. —

EXPORTERS OF  
**SWEDISH CHARCOAL IRON**

OF ALL DESCRIPTIONS:

Hammered and rolled BARS, NAIL RODS, WIRE RODS,  
BLOOMS, BILLETS, PIGS &c.,

**HORSE SHOE NAILS**

of the very best quality, of the "SHOE" brand,  
from the RÅDANEFORS WORKS;

— AND OF —

**WOOD PULP.**  
SULPHITE, CELLULOSA &c.

**E K M A N & C°,**

GOTHENBURG.

ESTABLISHED 1809.

Exporters of

## SWEDISH CHARCOAL IRON AND STEEL:

**Dannemora** and other superior brands for the highest class of **STEEL**,

**Hammered and rolled, finished Bars**

for steel and manufacturing purposes;

**WIRE RODS** and **NAIL RODS** of various brands;

**INGOTS, BLOOMS, ROUGH BARS and BAR ENDS**;

**PIG IRON** of various brands for **GUNS** and **SHELLS**, for strong and chilled  
CASTINGS, and for **MALLEABLE IRON** and **STEEL** purposes.

*Agencies in London, Sheffield, Paris, New-York &c.*

**A. W. FRE STADIUS,**  
**STOCKHOLM.**

Exporter of **IRON** and **STEEL**.

Sole holder of the following brands:



KOHLSVA

KW



SNT



# FÄGERSTA BRUKS AKTIEBOLAG, Westanfors, Sweden.

Manufacturers of

Hammered and Rolled

## SIEMENS-MARTIN

: : : AND : : :

## BESSEMER STEEL

of all dimensions and any percentage of carbon required,  
such as

### STEEL

FOR

CHISELS and turning TOOLS;

## ROLLED STEELWIRE

FOR

MAKING CARDING WIRE etc.;

## SIEMENS-MARTIN STEEL

FOR

THE MANUFACTURE OF NAILS;

## STEEL PLATES

FOR

SAWS, KNIVES and SIMILAR ARTICLES;

## STEEL and IRON WIRE ROPE

FOR

MINES, AERIAL LINES, SHIPRIGGING etc.

# Fagersta Bruks Aktiebolag,

WESTANFORS, SWEDEN.

Manufacturers of

## Frame Saw Blades

AND

## Circular Saws;

## HAMMERS, SLEDGES,

PICKS AND OTHER TOOLS;

AND OF

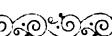
## Swedish Charcoal Iron,

free from phosphorus.

 Please note that all the FAGERSTA  
COMPANY'S steel is made entirely of their  
own ores with nothing but charcoal as fuel.

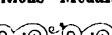
Prizes and Medals awarded at the following  
Exhibitions:

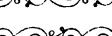
PARIS - - - 1867, 1st Class, Gold Medal, 

COPENHAGEN - 1872, 1st Class, 

VIENNA - - - 1873, 1st Class, 

LONDON - - - 1873, Annual International Exhibitions' Medal,

PHILADELPHIA 1876, Five Medals, 

ANTWERP - - 1885, Gold Medal. 

## The Fagersta Works Company, Limited, WESTANFORS, Sweden.

# FERNA JERNBRUK,

(**FERNA IRONWORKS**),

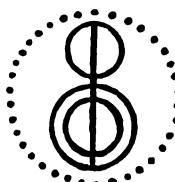
Ferna, Westmanlands Län,

—\*— (SWEDEN). —\*—

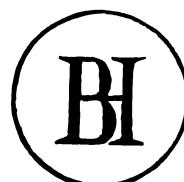
Makers of all kinds of

**Rolled Iron Bars, Wire Rods, Nail Rods, and of  
IRON** for Tacks, Bolts, Horse Shoes etc, all made of the purest  
**Charcoal Iron** on the Lancashire Method.

—\*— MARKS: —\*—



Ferna



CENTENARY  
MEDAL



**FERNA IRON WORKS.**

Ferna, Westmanlands Län, Sweden.

# A. FRÖDING & C:o,

GOTHENBURG.

Exporters of all kinds of

## SWEDISH IRON AND STEEL,

Sole Agents for the following Iron Works:

Degerfors:	K+	H	ND	K	K	AW	WC	WC
Lancashire Iron:	K	C	F	S	J	J.C.	C	DB
Siemens-Martin Iron and Steel:	M	DEGERFORS W.	A					
Fredriksberg:	F+L	F+A	H\$G	JL				
Gravendal:	HOS							

# GLOSEMEYER & Co.

STOCKHOLM.

## Exporters of Iron

of the following Brands:

Hammered Iron



Rolled Iron



N. M. HÖGLUND'S SONS & Co,

STOCKHOLM.

Exporters of all descriptions of  
SWEDISH CHARCOAL IRON & STEEL:

Pigs, Blooms, Billets;

Hammered & Rolled Bars;

Nail Rods, Wire Rods,

&c.

KJELLBERG & C:o,

→ STOCKHOLM. ←

Exporters of Iron.

For further particulars please see the advertisement  
on page 33.

# A. Johnson & C:o,

4 Vasagatan,  
Stockholm, Sweden.

Exporters of Swedish Iron and Steel:

Pig Iron

for Siemens-Martin, Foundry and other purposes;

Charcoal Iron,

viz. Rolled and Hammered Bars, Nail Rods  
and Wire Rods;

Bessemer and Siemens-Martin

Productions,

viz. Ingots, Blooms, Slabs, Billets, Bars,  
Nail Rods, Wire Rods, Tool Steel, Hig Steel,  
Milano Steel, Bambus Steel and Mining Tools,  
Ship and Boiler Plates, Sheet Iron,  
black and galvanized.

Speciality:

Soft Siemens-Martin Metal in Plates and Rods  
for cold cut and hot forged Horse Shoe Nails,

Telegraph and Telephone Wire of superior quality.

# J. A. Kjellberg & Söner,

\* Gothenburg, Sweden. \*

Exporters of  
*Swedish Charcoal Iron*

.. . and .. .

*Siemens-Martin Steel.*

Sole exporters of the celebrated makes of the

*Bofors Iron and Steel Works:*

**BAR IRON, NAIL RODS, WIRE RODS, HOOPS AND SHEETS;**

AND OF THE

*Rämen Iron and Steel Works:*

**NAIL RODS, WIRE RODS AND NAIL PLATES.**

◆ Registered brands: ◆

**CBF**



**BOFOR**  
S.M.I.



**TEGNER** and others.

# Kohlswa Iron and Steel Works,

KOHLSWA, SWEDEN.

—  
PROPRIETORS:

LARS LINDBERG'S

SUCCESSORS.



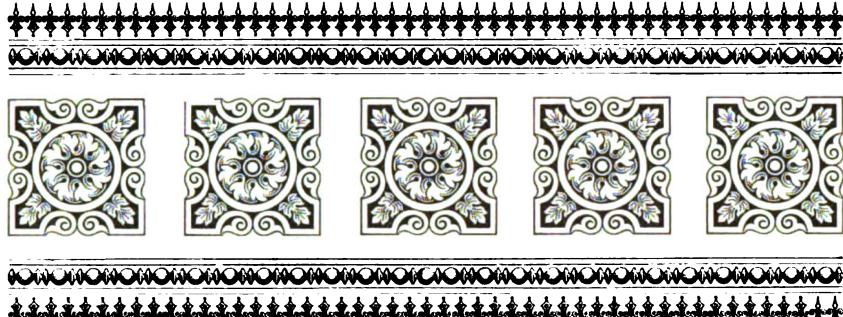
**SWEDISH CHARCOAL IRON and SIEMENS-MARTIN STEEL,**

Ingots, Billets, Blooms, Wire Rods, Nail Rods, Siemens-Martin Castings &c. &c.

**SWEDISH CHARCOAL PIG IRON**

for special purposes,

*ALL MADE EXCLUSIVELY FROM THEIR OWN ORES.*



# KÖLLERÖ BRUK,

*Ryr, Sweden.*

STEELMAKING WORKS

(ESTABLISHED 1724).

BUNDLE STEEL, BOX STEEL and BARREL STEEL

OF THE BRANDS:



Hammered and unhammered BLISTER STEEL.

**STEEL WARE MANUFACTURE.**

Enquiries and orders to be addressed to

*Axel L. Malmgren,*

*Ryr, Sweden.*



# LARSBO NORNS AKTEBOLAG,

\* ————— Diamond ————— Owners of ————— \*

The Wikmanshyttan Iron Works,  
Wikmanshyttan, Sweden.

———— Diamond ————— Manufacturers of —————

## CRUCIBLE CAST STEEL

of the finest quality (brand CRU),

awarded prize medals at Exhibitions in Stockholm, Paris, Copenhagen,  
Vienna, Madrid and Algiers, and suitable for

TOOL STEEL for Engineering Works,  
(Speciality: Chrome and Wolfram Steel);

WELDING and FACING STEEL for smithy work,  
(Speciality: Axe and Scythe Steel).

ROLLED STEEL WIRE, 5,5 millimetre diam. and upwards

DRAWN STEEL WIRE, 1      >      >      >      >

SHEET STEEL,                0,5      >      >      >      >

TOOLS for MINING and STONE CUTTING purposes, such as  
Miners Picks, Stone Sledges, Beetles, Wedges, Pick Axes,  
Wedge Picks, Quarry Picks, Stone Picks, Quarry Hammers,  
Mill Picks &c;

TOOLS for AGRICULTURAL PURPOSES, RAILWAYS and  
CONTRACTORS &c., viz: Wedges, Navvy Pick Axes,  
Hoes, Mattocks, Railway Hammers, Spanners, Screwdrivers,  
Crowbars and Levers;

TOOLS for SMITHS, CARPENTERS and ENGINEERING WORKS,  
viz: Adzes, Axes, Hatchets, Chisels, Gouges, Sledges,  
Hammers, Dies of every description, Screwdrivers &c.;  
(Speciality: Hammers of different sizes and shapes for Mechanics,  
Joiners, Shoe Makers, Farriers &c.). — Other tools and imple-  
ments made to order as per design or pattern.

STEEL CASTINGS of smaller sizes also made to order.

# Ljusne-Woxna Aktiebolag,

→ LJUSNE (SWEDEN). ←

*Owners of the following Establishments:*

## THE NORR LJUSNE IRON WORKS,

Manufacturers of

*Rolled Charcoal Bar Iron, Nail Rods, Wire Rods  
and Chains.*

*Shipping ports: Ljusne, Stockholm, Söderhamn and Gefle.*

Principal brands:

Lancashire Bar Iron:



Lancashire Nail Rods  
and Wire Rods:



Chains:



## THE SÖDER LJUSNE IRON WORKS,

Manufacturers of

*Rolled Charcoal Rough Bars*

for steelmaking, brand L T S,

for other manufacturing processes, brand IC, and of

*Rolled Steel Iron, brand*



**N. B.** All sales of the above mentioned iron effected by

**WILH. H. KEMPE,**

STOCKHOLM,

to whom all enquiries should be addressed.

# V. Reutervärd, Stockholm.

## MANAGER

of the Iron Works mentioned below.

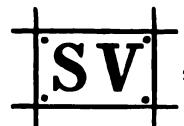
## Export of

Bar Iron and Bar Ends through the following agents:

Mess:rs N. M. HÖGLUNDS SÖNER & C:o, Stockholm,  
as regards the products of the  
SKINSKATTEBERG Rolling Mills, bearing  
the brands of



and



and

Mess:rs GLOSEMEYER & C:o, Stockholm,

as regards the products of the

BAGGÅ and BERGFORS Iron Works:

brands — for Hammered Iron —



and of the

STARBO and BORGFORS Blast Furnaces.

Pig Iron brands:



and PR

The Pig Iron and Bar Iron are both of the very best quality.

# Sw. Renström & C:o,

Gothenburg.

— (Established 1816). —

Exporters of all descriptions of

## Swedish Charcoal Iron and Steel,

viz Nail Rods, Wire Rods, Hammered & Rolled Bars,

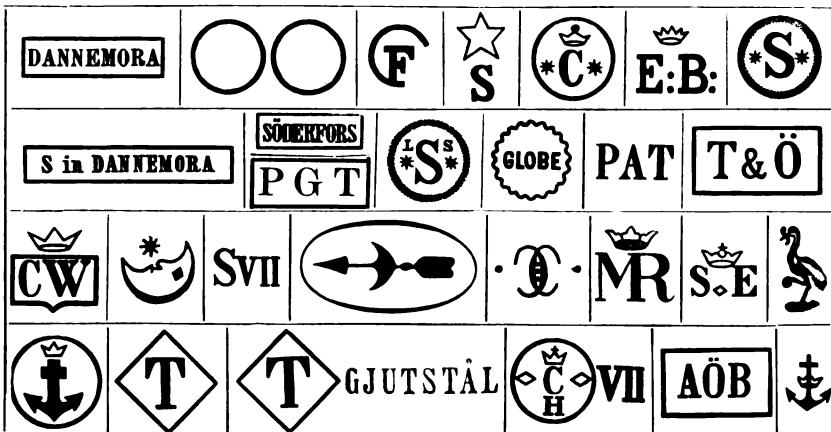
Billets, Blooms, Pig Iron &c.

## CARL SETTERWALL & Co.,

STOCKHOLM.

EXPORTERS OF SWEDISH IRON & STEEL.

Registered brands:



# Sandvikens Jernverks Aktiebolag,

(The Sandvik Iron Works C:o, Limited),

Sandviken, Sweden.

Brands:

**Sandvik**

**C E**

**P E**

## **Iron and Steel Works.**

Blast Furnaces, Steel Works,  
Forges, Rolling Mills,  
Wire & Coldrolling Mills etc.

Brand:



*Steel Blooms,*

*Steel Billets,*

*Steel Bars,*

*Steel Strips,*

*Steel Shafts,*

*Steel Cranks,*

*Steel Axles,*

*Steel Tyres,*

*Steel Tools,*

*Steel Hammers,*

*Steel Nail Rods,*

*Steel Wire Rods,*

*Steel Wire,*

*Remelting Steel,*

*Tool Steel,*

*Spring Steel,*

*Band Steel,*

*Hoop Steel,*

*Coldrolled Steel,*

*Watch Spring Steel,*

*Clock Spring Steel,*

*Busk Steel,*

*Band Saw Steel,*

*Paragon Ribs,*

*Saw Webs,*

*Span Webs,*

## → PRIZE MEDALS ←

Gothenburg 1860, London 1862, Stockholm 1866,  
Moscow 1872, Philadelphia 1876,  
Sundsvall 1882, Gefle 1882.

# Stora Kopparbergs Bergslags Aktiebolag,

—STOCKHOLM.—

Owners of the

## DOMNARFVET IRONWORKS,

Manufacturers and Exporters of

Charcoal Iron (rolled and hammered), Bessemer and Siemens-Martin Steel (Ingots, Slabs, Blooms, Billets and Bars of all usual sizes); Rails and Fish Plates; Angle Iron; Nail Rods and Wire Rods; Boiler and Ship Plates to Lloyds' and Veritas' tests; Plates for Bridges and general work.

Shipping ports: *Gefle, Stockholm and Gothenburg.*

Chief brands:

Lancashire-iron



Lancashire Steel-iron



Lancashire Steel-iron hammered



Bessemer-Steel



Siemens-Martin Steel



Owners of the

## FALUN COPPER MINE,

Manufacturers and Exporters of

Copper, Sulphate of Copper, Sulphate of Iron, Sulphur, Red Ochre &c.

Stora Kopparbergs Bergslags Aktiebolag,

—STOCKHOLM.—

# Surahammars Bruks Aktiebolag,

→ Surahammar, Sweden. ←

## Iron and Steel Works.



Manufacturers of  
Iron and Steel of Puddled or Siemens-Martin material.

### Railway Wheels and Axles.

Boiler and Ship Plates, Strips, Siemens-  
Martin Castings etc. etc.

#### Brands:

S<sup>h</sup>

AL

Z.S

E U O

*At the request of the Surahammar Works Company, Lim:d,  
we beg to certify, on behalf of the Swedish State Railways:*

that the said Company has for more than 20 years been annually supplying these railways with axles and wheels to such an extent, that those, delivered by the Company, at present amount to in all 15,725 or **70. 4 percent** of the total number of axles and wheels in use on the State Railways;

that the inspecting engineers of the Swedish Government **never** have had occasion to reject any goods, delivered by the Company; and

that since the State Railways commenced to use these axles and wheels on a large scale, the expenses of repairing the same have gone down so far, that during the last 5 years they have not averaged fully 35,000 francs yearly, which is equal to  $\frac{1}{17}$ :th of a centime per axle kilometre per year; and also

that the Railway Administration, after a minute examination of some puddle steel axles of the Surahammar make, which had run 400,000 kilometres, has resolved that the same may run up to 500,000 kilometres, whereas otherwise such axles of other makes are generally rejected after having run 420,000 kilometres.

Stockholm the 25:th of November 1885.

For the Board of Administration of the  
Swedish State Railways:

**C. O. Troilius.**

*Fr. Almgren.*

The Shipbuilding Yard of the Royal Swedish Navy,  
Stockholm.

The Engineering Department.

I have great pleasure in certifying that considerable quantities of iron plates of the Surahammar make have been used for a number of years at the Royal Swedish Dockyards in Stockholm and that there we do not know of any plates that surpass the same in quality.

**J. L. Frykholm,**

Chief Engineer.

Stockholm the 10:th of December 1885.

Aktiebolaget Separator.

Stockholm 8:th January 1886.

After having for some length of time used your Siemens-Martin plates and subjected parts of machinery, made of the same, to some severe tests, as regards as well their tensile strength as their elongation, we beg to state that we have every reason to testify to the excellent qualities of these plates.

For Aktiebolaget Separator:  
**Oscar Lamm J:r.**

# Uddeholms Aktiebolag,

Uddeholm, Sweden.

Makers and exporters

— of —

CHARCOAL IRON,  
BLISTER STEEL,

Bessemer and Siemens-Martin Metal  
of the best quality and of all dimensions  
and kinds, viz:

*Ingots, Billets, Bars, Strips and Rods,*

as well as products of the same, such as

Boring Steel and Tools,

↗ Spring Steel, ↘

Wheel Axles, Sledges, Hammers, Mattocks,  
CROW BARS, AXES, ANVILS,

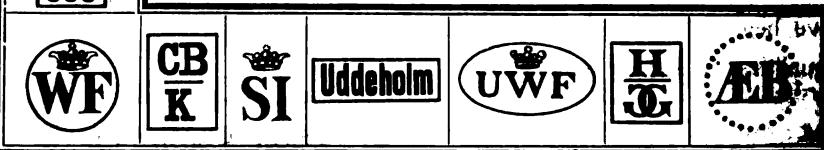
CASTINGS of Siemens-Martin Steel,

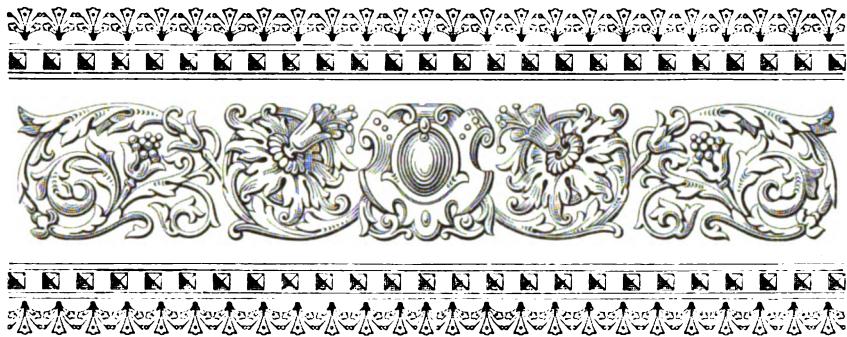
**SHOES and NAILS for Horses,**

DRAWN WIRE, WOOD SCREWS etc.

*Post and telegraph address:*

UDDEHOLM, SWEDEN.





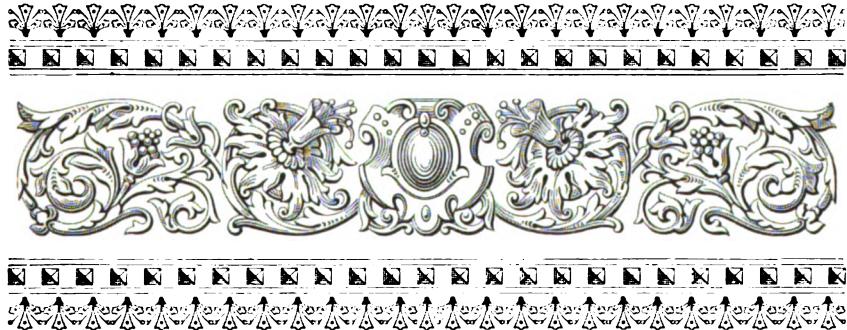
# GUSTAF WALL, GOTHENBURG.

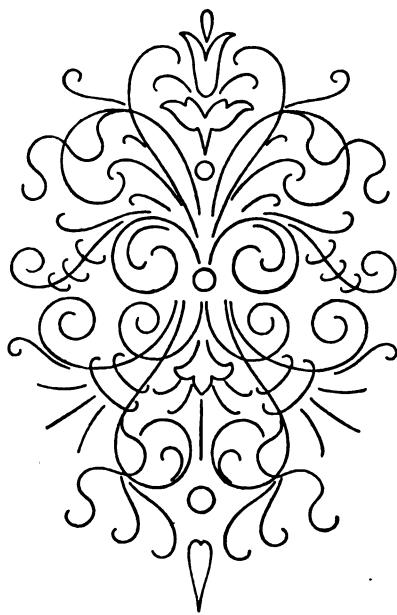
Exporter

— of —

## Swedish Charcoal Iron.

Please see page 38.





# The Engineering and Hardware Industry.







s previously mentioned in our review of the Iron and Steel Industry, Swedish iron has chiefly been introduced into foreign markets in a more or less raw state.

The reason of this is obvious. The Swedish iron manufacturers have only of late commenced to turn their splendid raw material into more finished articles on such a scale, as to be able not only to supply most of the requirements of their own country but also to have, in some instances, a surplus for export. Thus, until quite recently, chains, wire and wirerope, screws, nails, anvils, hammers, spades, shovels, knives, scissors, razors, saws, files, skates, axes and similar articles were in large quantities imported by Sweden. The same was also the case with the products of foundries and engineering works, such as stoves, ovens and other cast iron goods; steam engines and boilers; agricultural implements of all kinds (except ploughs); machines for working iron and wood; bridges and other structural work etc. This state of things, however, is now changed to a great extent. During the last few decades the Swedish mechanical industry has developed in a remarkable manner, so that, whereas in 1858 Sweden had 48 foundries and engineering shops, employing 2,500 workmen and turning out goods of the value of 4.3 millions kr., in 1890 these establishments had increased to 214, occupying 15,804 hands with a turn out of 37.8 mill. kr. In 1858 the engineering works and foundries represented 8 per cent of the total value of all the manufacturing industries of Sweden, thus occupying the 4:th place on the list of these industries; in 1890 they had risen to 14 per cent, and the mechanical industry headed that list.

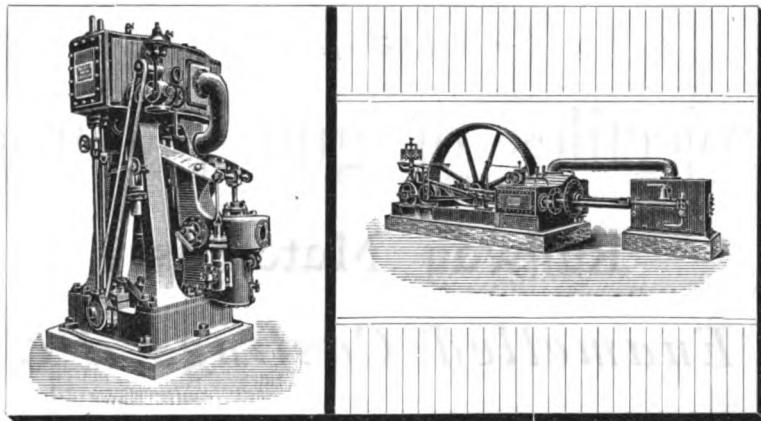
We annex below some statistical figures.

Year.	Number of establishments.	Number of workmen.	Value of manufactures.
1861	74	3,161	Kr. 4,890,593
1866	93	4,727	» 7,892,565
1871	96	6,136	» 10,836,268
1876	198	10,500	» 29,459,845
1881	223	11,029	» 25,951,784
1886	227	12,868	» 26,767,085

With the exception of a few specialities, such as heavy cast iron pipes and some machinery, belonging to the textile, paper and printing industries, we are now able, if requisite, to supply our own requirements of foundry goods and machinery of every kind and have also commenced an export of such articles, which is steadily increasing and looks very promising for the future. And it appears a matter of course, that things should take this desirable turn, as soon as Sweden had acquired a thorough knowledge of her natural resources and, by improved communications (railways &c.), the means of availing herself of the same. The truth is that Sweden possesses many advantages, that will enable her to hold her own in competition with other countries, as far as the manufacturing iron and steel industries are concerned. In addition to the excellent raw material she has the benefit of cheap working expences, this as regards as well workmen's wages, as cost of motive power, which latter in many instances is supplied by waterfalls, with which the Swedish rivers abound. Sweden also provides for her sons a thorough and gratuitous education in engineering matters by means of a technological academy in the Swedish capital and technical schools, spread over the country. Besides this, the Swedes generally, and more especially that class, whence artisans are mainly drawn, were known of old for their handiness and inventive genius.



# Nya Aktiebolaget Atlas, Stockholm.



MAKERS OF  
**STEAM ENGINES,**  
**Portable Engines,**  
**BOILERS;**   
**RAILWAY PLANT,**  
***Tram Cars,***  
**Tramway Materials;**  
**GUN CARRIAGES**  
—  
other Mountings for *military requirements*, all of  
the best Swedish materials.

**A**KTIEBOLAGET **A**NKARSRUMS **B**RUK,

**ANKARSRUM, SWEDEN.**

Projectiles of gun pig iron;

Railway Materials;

*Enamelled Castings &c.*

Please see further page 48.

Aktiebolaget

**Bofors—Gullspång,**

BOFORS, SWEDEN.

Ordnance, Military Carriages,

SHELLS &c.

Please refer to page 49.

TRADE FABRIKS-



MÄRKE. MARK.

Aktiebolaget  
Theodor Carlssons Grepfabrik,  
**ESKILSTUNA.**

Manufacturers

of

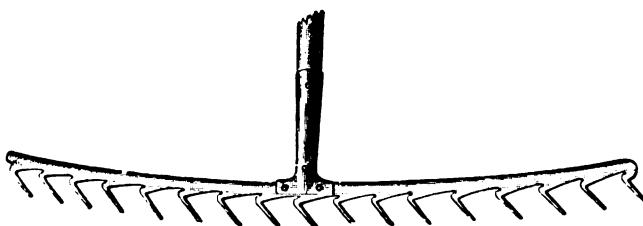
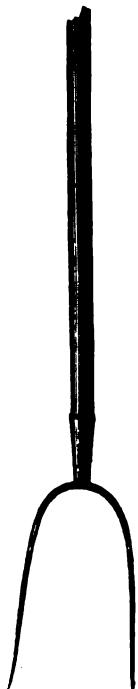
STEEL HAY FORKS,

PITCH FORKS,

SPADES,

SHOVELS AND HAND RAKES,

*all of first quality.*



# AKTIEBOLAGET FINSPONGS

STYCKEBRUK,

FINSPONG \* SWEDEN.

Manufacturers of

## GUNS and other WAR MATERIAL

at the

Finspong Factory, Sweden.

---

*Finspong* has long been famous for its manufacture of cast-iron guns with their projectiles, as used by the Swedish Army and Navy, and even by several foreign powers.

By degrees, the requirements of war ordnance increasing, the simple cast iron guns, formerly in vogue, were found to be of insufficient power. So, about twenty years ago, the Finspong Works commenced the manufacture of cast iron guns, *hooped with steel*, the demand for which increased to such an extent, that the Works not only supplied *all* guns of this make to the Swedish Army and Navy, but also executed large orders from foreign Armies for steel-hooped cast iron guns. But the demands for increased strength of the gun metal have now gone so far, that for certain purposes even these materials must yield the palm to *steel alone*.

Nevertheless there is still, as we shall have occasion to prove later on, a large domain, within which *cast iron* will fully bear comparison with *steel*, while on the other hand there are certain branches of gun manufacture, for which the superiority of the latter metal is undoubted. So, when a gun of minimum weight must produce the greatest possible effect. Field guns, for instance, must possess both these contrary qualities, viz: considerable power, combined with light weight. Therefore the Swedish Artillery, when renewing the armament of their field batteries, were obliged to resort to *steel* as their gun material. It was *at first* necessary to apply to foreign manufacturers for this material. But the Swedish steel industry speedily attained to such perfection as to be able to produce the most excellent steel guns.

Since that time the Finspong Works have supplied a considerable number of guns to the Swedish Army and Navy, some being for field batteries, and others of a larger caliber.

The Works have also manufactured guns of smaller caliber than the field gun, viz: Disembarking Guns for the Swedish Navy, and Machine Guns of several calibers, the latter being provided with breech mechanism of a new design, for which patents have been taken out by the Works in all the principal countries.

Side by side with this production of guns, the manufacture of Projectiles has steadily increased at Finspong, whence during these years enormous quantities of cast iron projectiles have been delivered, varying in calibers of from *8* to *27 centimetres*. Some of these projectiles (chilled shot) are intended to be used against armour.

Finally, the Finspong Works have produced Steel Shells of the finest quality, being equal to the best perforating projectiles, supplied by any foreign manufacturer, as has been fully proved by firing tests against armour plates.

We also beg to draw attention to another branch of industry at the Finspong Works, viz: that of *building Carriages*, partly for heavy guns, used in the defence of the coasts, and partly for the lighter machine guns, mentioned above and which are manufactured at the Finspong Works.

## I. Cast iron Guns, hooped with Steel.

Before entering into any description of the Finspong manufacture of cast iron *steel-hooped* guns, we shall make a few remarks on both this kind of guns and cast iron guns generally, as compared with those of steel.

The vast improvements, attained in gun manufacture during the last two decades, and the consequent increased demands, made on gun material, have induced several Artilleries to abandon the old gun metals in favour of steel. The superiority of steel can hardly be disputed, when the problem consists in having to produce a gun, capable of creating the *greatest possible effect*, combined with the *smallest possible weight*. Thus, for reasons easily understood, the great steel manufacturers, the firm of Krupp in the first place, have made use of this fact to establish, as a general standard for the value of a gun, the numbers indicating the capacity, as compared with the weight. It is obvious, that this principle, in a great measure, prevents the use of other gun metals than *steel*; and if it has not been specially established for this purpose, it is, at least, very much used in favour of it, but we shall endeavour to prove, that it cannot be advantageously employed in *all* cases.

It is generally known that, in constructing a gun, we very often do not reduce its weight to the minimum, i. e. the limit, beyond which it would have insufficient strength for firing. In order to prevent too violent recoils when firing, which severely strain the carriage and, besides, cause other inconveniences, it is absolutely necessary to give to each gun a weight, corresponding to that of the projectiles, and as this increases in proportion to the muzzle velocity, the weight of a gun is often determined by the desirability, or the necessity, of keeping the recoil within certain limits. Calculating on this basis, a considerably greater weight is arrived at, than if the dimensions of the gun are merely measured for giving sufficient resistance to the powder gas. This applies to nearly all guns for high angle fire (mortars, howitzers or short guns). Even, with regard to other kinds of guns, many instances occur, in which it would be unwise to reduce the weight to its minimum.

To prove this assertion, we may first examine the case of fortress artillery, for instance that used for defending land fortresses. In modern works of this kind most of the heaviest guns are already being mounted in armour-plated turrets or cupolas, and doubtless, in a time not far distant, the more important of the fortress guns will thus be placed behind armour. But, this mode of mounting being of a permanent nature, it is evident, that, after the guns are once in their places, further transport of the same will but seldom be requisite, wherefore it is quite unnecessary to greatly reduce their weight.

Certainly, even in the turret, it may sometimes be necessary to replace an injured gun by another, but in such cases the defenders can always employ a lifting jack, a

lever or some other mechanical appliance, so that, for instance, a few hundred kilogrammes extra weight for a 15 centimetre gun would virtually be of no great importance; on the other hand, it is obvious, that this surplus weight, which need not impede the facility of working the turret, can at least simplify the arrangements for controlling the recoil, whether a hydraulic carriage is used for reducing it to a proper limit, or it is suppressed altogether, or communicated to the whole turret.

The same argument may apply to those guns, which, according to a project of the celebrated Belgian general Brialmont, are to be mounted on waggons and drawn on a covered railroad between the forts, and if the transports be executed in this way, a slight difference in the weight is evidently of no importance, while the facility, gained in limiting the recoil, may prove to be of great value.

Lastly, we take the liberty of bringing before our readers the Guns, mounted on Siege Carriages, which, combined with special mounting carriages, allow the speedy transport of the guns on ordinary ground, in the trenches etc. etc.

In order to give the greatest possible lightness to these guns, one might certainly be tempted, as in the case of field guns, to reduce their weight to the utmost, determined, of course, by their power of resistance. But the necessity of avoiding a too violent recoil, when firing, has induced the constructors to give the guns a surplus weight. We will give one example among many.

In most European Artilleries, a long gun with a caliber of about 15 centimetres occupies a very important place among fortress and siege guns. It is mounted on a siege carriage and must be capable of easy transport from one place to another. The weight of the gun and carriage, together being about 5000 kilogrammes, is so divided, that the gun weighs 3000, and the carriage 2000 kilogrammes in round numbers. There is, however, one instance of the division differing from the general rule, and where the weight of the gun is about 2,500 and that of the carriage exceeds 3,200 kilos. We may add, that this gun, belonging to the Artillery of a great power, far from being inferior to guns of other great nations, on the contrary, produces considerably greater effect than they.

The result of this is, that, with steel as the gun metal, a sufficiently powerful 15 centimetres gun can be constructed with about  $\frac{5}{6}$  of the weight, which most guns of this type now possess, though these also generally are of steel (in one Artillery of steel bronze), and that, on the other hand, the constructors, because of the necessity of more conveniently controlling the recoil, have thought it better to fix the total weight at at least 5,000 kilogrammes; in the case, just mentioned, it exceeded 5,700.

For these siege guns also, the principle of demanding the greatest possible effect, in proportion to the smallest weight, has not been adhered to; even if used in a single instance, it was found necessary to compensate for the want of weight in the gun itself, by making the carriage all the heavier instead. Lastly, it would be easy to prove, that in the matter of coast artillery, where the guns are permanently placed, many instances occur, where it would be a mistake to reduce the weight of the guns to the limit, necessary for obtaining a sufficient resistance to the powder gas, and neglect all other consideration.

We have shewn, that there are cases, where it is neither necessary nor advantageous to make the guns particularly light, by employing steel as the gun metal. In such cases we may, without disadvantage, employ another metal, which certainly demands a somewhat greater weight, in order to give the necessary resistance. But it is obvious, that the question, as to whether we ought to choose this metal, depends also upon other advantages, the difference in price for example. It is just this advantage Cast iron, hooped with Steel, possesses. In the cases above mentioned, besides

many others, it is possible to construct guns with this metal, not in any way inferior to guns now in use, and not exceeding their weight to a degree, which could sensibly influence the facility of their being handled. It is therefore of small importance to the wants or security of the artillery, whether we choose steel or cast iron, hooped with steel, but, in respect to economy, the difference is very great, for the price of the latter does not exceed 80 per cent of the former. We need hardly remark upon the importance of this difference in price to a country, engaged in arming its fortresses, or stocking its arsenals. Most important is this consideration for smaller nations, which, of necessity, must expend less on their war material, even speaking comparatively, than the greater powers. When a small nation has at great cost procured the full equipment for its Field Artillery (naturally the wants of the active troops are always first attended to), the fortresses have to be armed, which takes a great number of guns, partly of rather large caliber and proportionally high prices.

This armament often demands such sacrifices, that it becomes too burdensome for the finances of the country, and pretty often even the needful funds are partly or totally refused. In such an exigency, costly fortresses might remain useless longer, than care for the country's security ought to allow. — Thus we see, that the *price* of guns is a matter of importance, and everybody may realize the benefit of obtaining 5 guns of hooped cast iron instead of only 4 steel ones at the same price. Just lately, several European countries were obliged, for the sake of security against more powerful neighbours, to build large and powerful fortresses, which demand not less costly armament. We would venture to draw the attention of these powers to the savings, they might be able to effect by using hooped cast iron guns.

Indeed, this fact has already been noticed, as proved by the large orders, given to the Finspong Works from abroad for guns of different calibers.

Besides which, the Finspong Works have delivered, both at home and abroad, heavy guns of cast iron, hooped with steel, for coast defence.

---

In order to give an idea of these guns, we have inserted in Table I (please see below) the principal dimensions etc. of some, that have been manufactured at Finspong. This table shews, that all the guns completely satisfy the requirements of the present time, and that their weight does not materially exceed that of steel guns with a corresponding effect.

From the above we find, that we should *always* choose steel-hooped cast iron for short guns (howitzers) and mortars, and that this material is superior to steel, where the permanent nature of the mounting completely, or in a great degree, removes the need of transports, and even in siege batteries, where the difficulty of limiting the recoil in very light guns is more to be considered than the mere advantage of a somewhat easier transport.

---

## II. Steel Guns.

As already mentioned in our introduction, The Finspong Works have, of late years, manufactured a great number of steel guns of different calibers. These were mostly constructed of steel, cast without blow holes, and not forged; only one class being furnished with hoops or rings, according to the well known method of coiling and welding puddled steel bars.

Before the Swedish Army and Navy decided on accepting pieces, made of steel, cast without blow holes, some severe experimental trials were made with them,

leaving the most satisfactory results and fully proving, that this metal, if produced from the best raw material and treated with necessary care, possesses all the good qualities of Mr Krupp's finest crucible steel. The guarantee of the Finspong process giving a sure and equal product is, besides, secured by test pieces, taken from all ingots. The drawing tests, made with these bars, in respect to limit of elasticity, breaking strain and elongation, give results, not inferior to those, obtained from Lord Armstrong's gun steel and the forged cast steel (produced in Siemens-Martin's furnaces), as used for the French ordnance. The Finspong steel has, besides, the great advantage of being less costly than either of these. As cast steel without blow holes need not be forged after casting, that difficult and expensive process is avoided, thereby enabling us to produce this metal at a lower price than forged steel, whether from Siemens' furnaces or from crucibles. It is well known, that the Terre-Noire Works in France, when experimenting in the use of cast steel without blow holes for gun manufacture, were unsuccessful in their efforts. The reasons, why the Finspong Works have, on the contrary, been able to obtain the most favorable results from this metal, are: Firstly, these works have superior raw material at their command, which is, of course, a great consideration, and secondly the amount of experience, acquired by continued practice and long, careful studies of the various properties of the metal, have together given rise to such improvements in the process of casting and the subsequent treatment of the ingots, that the satisfactory result of these labours is a metal, fully equal to the best known at the present time.

---

Table II (please see below) contains the dimensions etc. of guns, made of cast steel without blow holes. All these, excepting the 47, 57 and 75 millimetres quick firing guns, belong to the Swedish Army or Navy.

These quick firing (machine) guns require whole cartridges, the powder charge being enclosed in a brass case, attached to the projectile. The new, patented breech arrangement is distinguished by its simplicity, so that the operation of loading can be performed with the greatest ease.

The 47 and 57 millimetres guns are principally intended for arming ships. On account of the enormous velocity, about 657 and 570 metres, given by these pieces to their projectiles, they are very effectual against torpedo boats.

These guns are made of 3 types:

Type 1 is worked by hand only and is mounted on a non recoil carriage (adapted for the Norwegian Coast defence).

Type 2 opens the breech block and extracts the cartridge cases automatically, after the shot is fired, but the closing of the breech is done by hand.

Type 3 opens the breech, extracts the cartridge case and closes the breech again automatically, after a fresh cartridge has been pushed into the chamber.

Type 2 & 3 are mounted on recoil carriages.

In order to render the pointing both quick and accurate, indispensable attributes for a successful contest against the adversary, the guns are mounted on carriages, specially constructed and also patented.

With these carriages, the gunner is able to point the piece as easily as a rifle, by leaning his shoulder against a stock, attached to the gun, and, when once in position, its steadiness, in respect to training angle and elevation, is instantaneously secured by the simple movement of a lever.

The 75 millimetre gun is constructed for caponiers, disappearing armour-plated turrets etc., in one word, for such places, where we wish to keep the foreground under an efficient fire. This gun is on the type 2 pattern.

All further information will be supplied by the undersigned, to whom all enquiries should be addressed. When ordering guns, the buyer can either send complete drawings for the same, or state the requirements, wanted of the gun, in which latter case the Works will make out drawings and submit them to the buyer's approval.

**Aktiebolaget Finspongs Styckebruk,  
Finspong, Sweden.**



Table I. Cast Iron Guns, hooped with Steel.

Guns	Caliber	Total length			Weight of gun kilos	Breech fermeture	Weight of powder charge kilos	Muzzle velo- city metres
		milli- metres	milli- metres	cali- bers				
<b>Swedish Land Artillery:</b>								
12 centimetre gun .....	117.0	2800.0	23.9	1487	{ Interrupted screw		3.5	15.3 16.9 440
17 centimetre gun .....	167.2	3873.0	23.2	5650	,		11.0	42.5 51.2 450
16 centimetre howitzer ..	155.0	1780.0	11.5	1396	,		3.2	36.3 302
22 centimetre howitzer ..	216.0	2259.0	10.5	3914	,		7.5	89.5 300
<b>Swedish Marine Artillery:</b>								
12 centimetre gun .....	121.7	3145.0	25.8	2550	,		6.25	22.0 450
<b>Danish Land Artillery:</b>								
12 centimetre gun .....	118.3	2969.0	25.1	1545	,		3.875	14.8 474
15 centimetre gun .....	149.1	3743.0	25.1	3075	,		7.5	29.6 472

Table II. Steel Guns.

Guns	Caliber	Total length			Weight of gun kilos	Breech fermeture	Weight of powder charge kilos	Muzzle velo- city metres
		milli- metres	milli- metres	cali- bers				
<b>Swedish Land Artillery:</b>								
8 centimetre gun .....	84.0	2300	27.4	460	{ Cylindro- prismatic wedge		1.5	6.7 470
12 centimetre gun .....	117.0	3500	29.9	1205	{ Interrupted screw		3.35	16.8 32.2 475
16 centimetre gun .....	155.0	4292	27.7	2992	,		10.0	39.0 520
16 centimetre howitzer ..	155.0	1900	12.3	1350	,		2.5	32.2 39.0 276 261
<b>Swedish Marine Artillery:</b>								
65 millimetre gun .....	65.0	1154	17.8	95	,		0.4	2.7 350
8 centimetre gun .....	84.0	2246	26.7	430	,		1.5	6.7 470
12 centimetre gun .....	121.7	3135	25.8	1890	,		7.25	22.0 500
<b>Quick-firing Guns:</b>								
47 millimetre gun .....	47.0	2440	51.9	250	Vertical wedge		0.75	1.5 657
57 millimetre gun .....	57.0	2600	45.6	315	,		0.88	2.72 570
75 millimetre gun .....	75.0	2580	34.4	373	,		1.10	4.7 470

**Aktiebolaget Göranssons Mekaniska Verkstad,  
STOCKHOLM, SWEDEN.**

Engineering Works, manufacturing as specialities:

**GYMNASTIC APPARATUSES,**

on the system of D:r ZANDER, Stockholm,

— AND —

Machines for the manufacturing of  
Boxes of wood and card for

**WOOD MATCHES AND WAX MATCHES.**

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STOCKHOLM.

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Karlstads Mekaniska Verkstad,  
KARLSTAD, SWEDEN.**

Manufacturers of

Complete Sets of Machinery  
for making  
Sulphite & Cellulosa  
and Ground  
**Wood Pulp.**

# AKTIEBOLAGET SEPARATOR, STOCKHOLM.

Prospectus free.



Därlecarlian girl with Baby Separator.

Skinning capacity from 20 to 50 gallons an hour.

# AKTIEBOLAGET SEPARATOR, STOCKHOLM.

## Steam Turbine Separator.

### Advantages:

*Steam engine superfluous.*

*Great economy in wear, lubrication and care.*

*Beltings not required.*

*Setting in motion and stopping effected in a quick and easy manner.*

*Space required only 3 square feet.*

*No special foundation is required, if the floor is tolerably solid.*

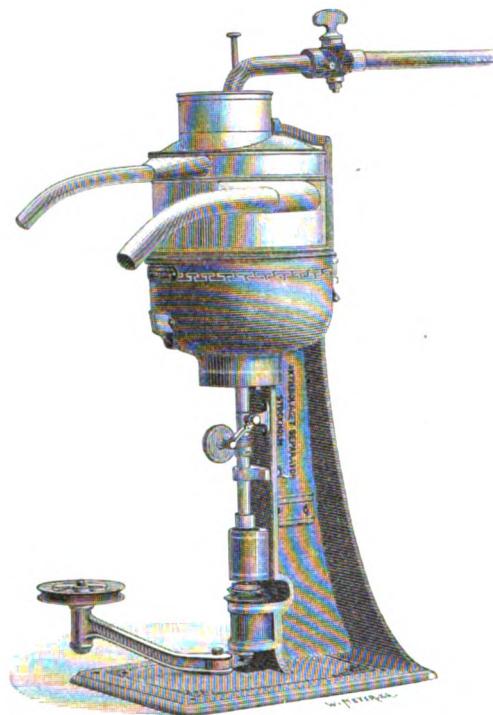
The Turbine Separator Alfa E 2 skims 330 imp. gall:s pr hour.



# AKTIEBOLAGET SEPARATOR, STOCKHOLM.

## The Alfa-Separator

is manufactured in 8 different models:



Alfa N:o 2 skimming 330 Imp. gallons pr hour.

<i>Alfa N:o 2</i>	<i>skims</i>	<i>330 imp. gallons pr hour.</i>
<i>Alfa N:o 1</i>	"	<i>180</i>
<i>Alfa E N:o 2</i>	"	<i>330</i>
<i>Alfa E N:o 1</i>	"	<i>180</i>
<i>Alfa Pony</i>	"	<i>110</i>
<i>Alfa K</i>	"	<i>55</i>
<i>Alfa B</i>	"	<i>55</i>
<i>Alfa S</i>	"	<i>30</i>

 Agents in all countries.

is manufactured in 8 different models:

## The Alfa-Separator

# AKTIEBOLAGET SEPARATOR, STOCKHOLM.

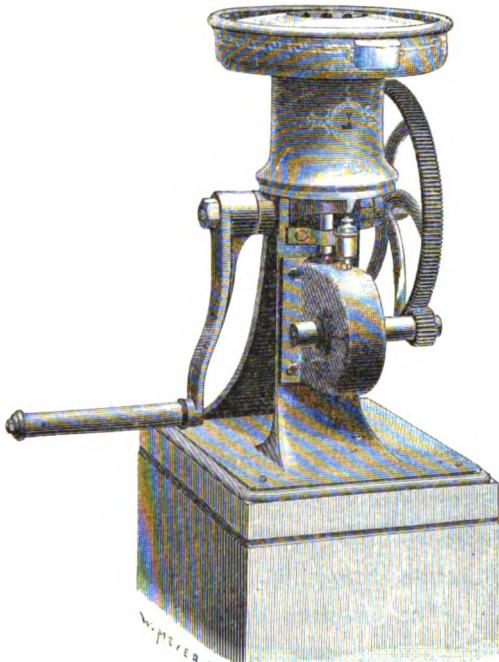
## The Baby Lactocrite

*is a simple, hanay  
and sure apparatus  
for testing the butter  
fat, contained in  
Milk, Cream and  
Skim Milk.*

*The apparatus  
gives as certain a  
result as the chemi-  
cal analysis.*

*The tests are  
obtained by means  
of the lactocrite a good deal quicker and cheaper  
than by any other method. **12 tests** can be made  
at the same time.*

*The lactocrite can be used by anybody after  
a short practice.*



# Aktiebolaget Öfverums Bruk, Öfverum, Sweden.

*The Öfverum Works*, owning large estates and forests; iron-mines, blasting-furnaces and hearths for the manufacture of the best charcoal iron; sawmills and joinery works; engineering works etc. etc., are situated in Sweden, near the city of Westervik.

Connected, as they are, by railways and steamers with all the Baltic ports, their productions are capable of easy and rapid transmission to any part of the world. The Öfverum Works produce a far greater number of ploughs and other agricultural implements than any other establishment of the kind in Scandinavia.

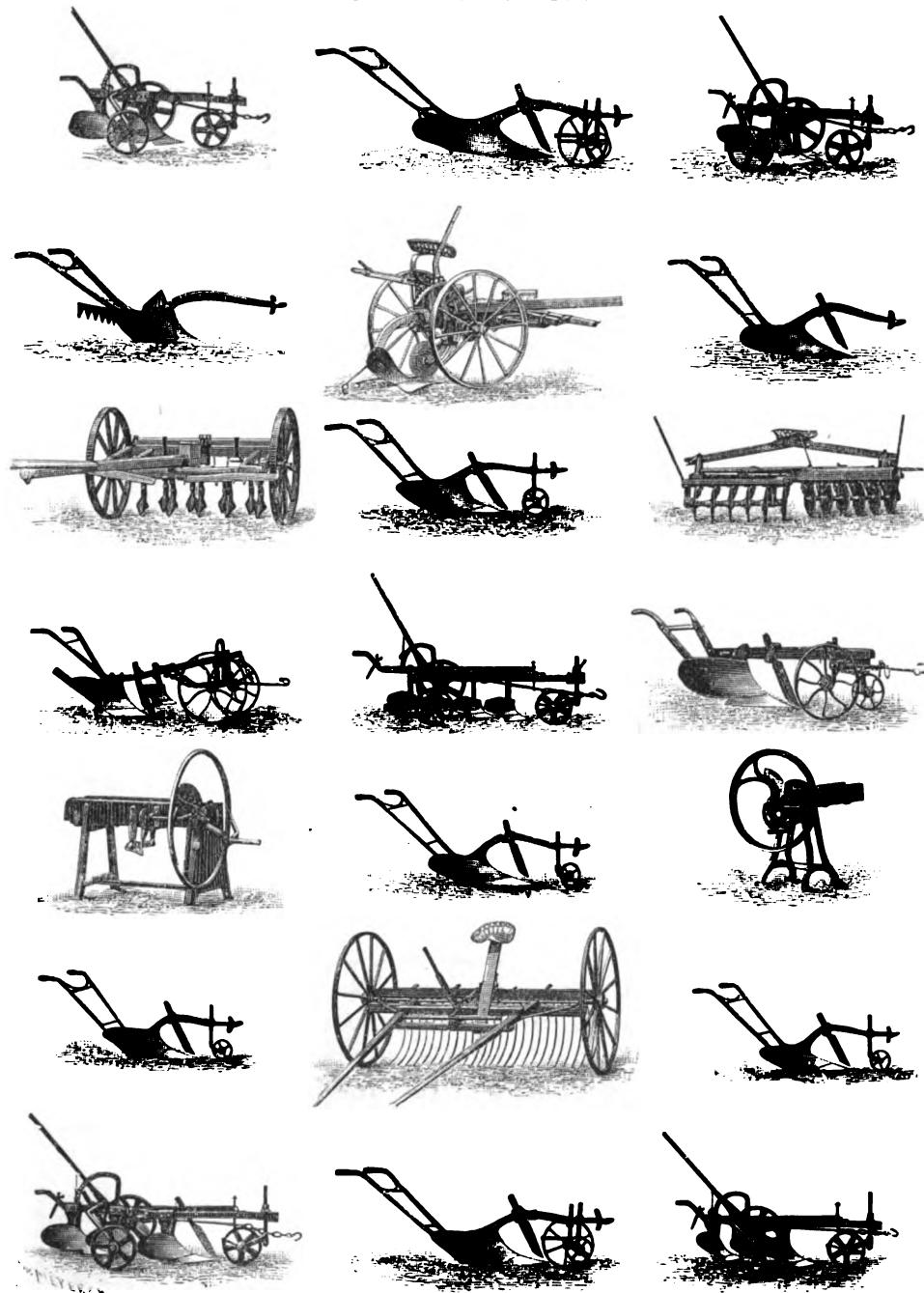
All the iron, used for these implements, is best charcoal iron of the Works, own well known make, the castings having been specially tested and proved to be superior to all others made in Sweden. The greatest care is taken in the manufacture, only perfect implements being allowed into the market, and, in consequence of this, the Works are in a position to offer buyers agricultural implements of a quality, unsurpassed by any make, either in Sweden or abroad.

It is owing to the superior quality of their goods, that the Öfverum Works have succeeded in obtaining a market for the same, wherever they have been introduced. There is a continual demand for their implements in Russia, where the Works have a separate branch establishment, and dépôts have also been formed in India, Spain, Algeria, Australia, Brazil, the Argentine Republic and other countries.

The Öfverum Works have been established as ironworks for upwards of a century, and the manufacture of agricultural implements has been carried on there during fifty years; they have taken more than **150 Prizes** at various Exhibitions in Sweden, Norway, Denmark, England, India, Algeria, Spain, France, Germany, Austria and the Argentine Republic, among others the medal "Honoris Causa" in London 1862, and twice they have received the great Gold Medal at Universal Exhibitions in Paris.

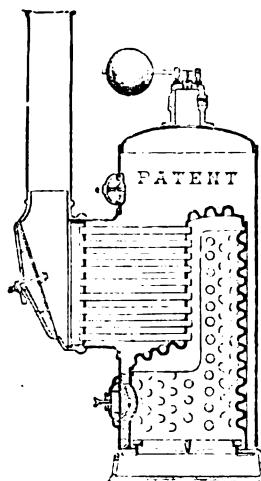
*The Öfverum Works,  
Öfverum.*

**AKTIEBOLAGET ÖFVERUMS BRUK,**  
**ÖFVERUM.**



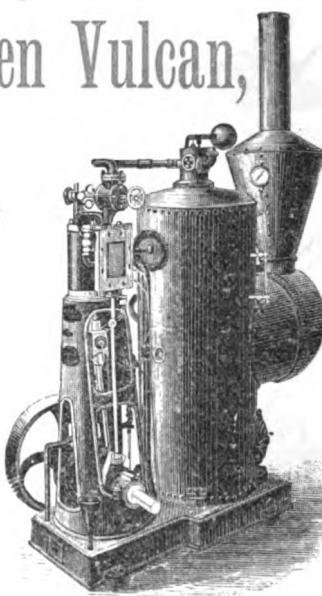
**AKTIEBOLAGET ÖFVERUMS BRUK,**  
**ÖFVERUM.**

Aktiebolaget  
Mekaniska Verkstaden Vulcan,  
Norrköping.



*Specialities:*

Steam Engines,  
Boilers,  
Turbines,  
Steam Pumps,  
Steam Stoves  
with stone lining,  
Shafting,  
Pulleys etc.



❖ Åkerlunds Etablissement, ❖  
STOCKHOLM.

MANUFACTURERS AND EXPORTERS  
of the

REFORM IRON CHAIR.

*Patents granted in all civilized countries and prizes awarded  
at several Exhibitions for the elegance, comfort and  
durability of this chair.*

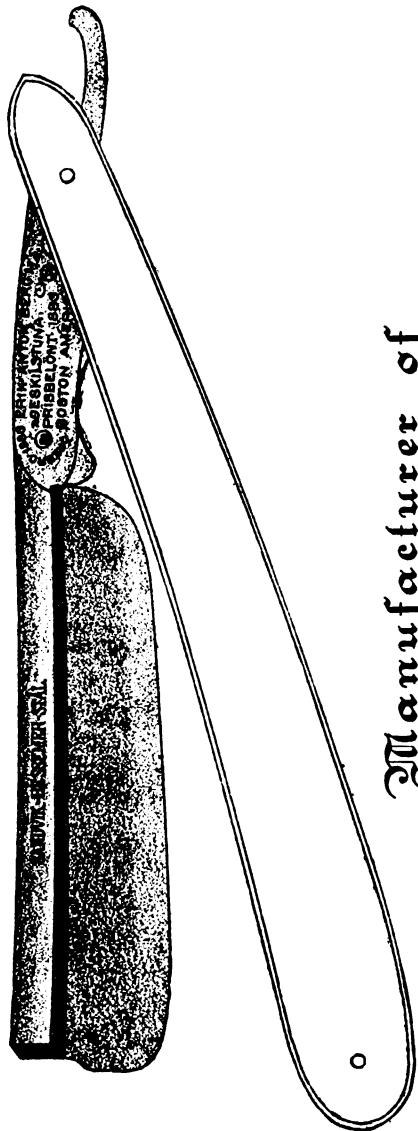
All iron chairs hitherto existing in the market are riveted, whilst the leading feature of this new make is that it consists of wire twisted together, the elasticity of which renders the chair most comfortable in use.

It will be almost needless to point out the great advantages gained by doing away with rivets, as these sooner or later must be destroyed by rust; and it is also obvious that the chair must be weakened by the rivet holes.

The chairs are manufactured of wire, whilst the latter is in a cold state; the wire thus used is made entirely from the best brands of the famous Swedish iron and possesses an extraordinary flexibility, enabling it to resist the great strain put upon it during its twisting.

**ERIK ANTON BERG,**

— ESKILSTUNA A. —

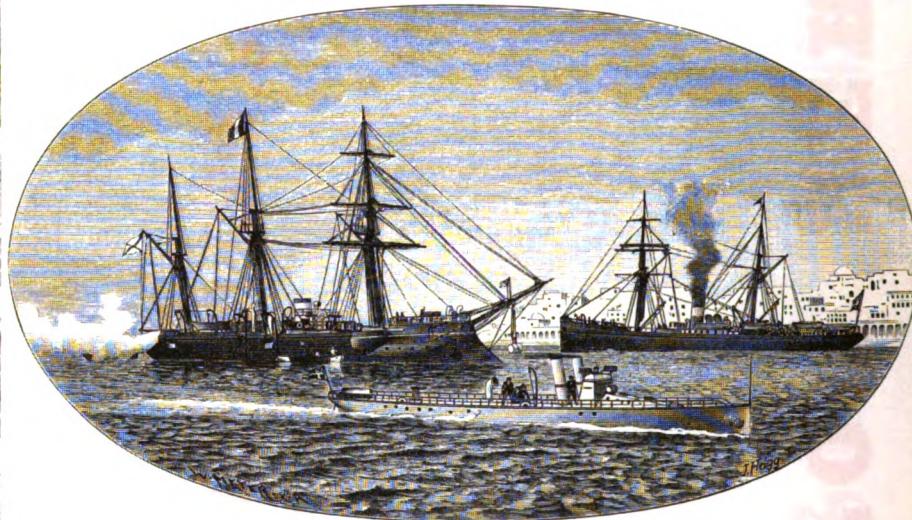


Manufacturer of  
**RAZORS, SHOEMAKERS' KNIVES, AND CIGAR CUTTERS.**

→ PRIZES AND MEDALS ←

awarded at the Exhibitions in Malmö, Sweden, Boston, U. S. A., Copenhagen, Denmark,  
and Stockholm, Sweden, &c.

**BERGSUNDS MEKANISKA VERKSTADS AKTIEBOLAG,  
STOCKHOLM.**



MANUFACTURERS OF  
Cargo, Passenger and River Steamers, Cruisers,  
Gun Boats, Torpedo Boats, Tug Boats, Dredgers etc.

ALSO OWNERS OF

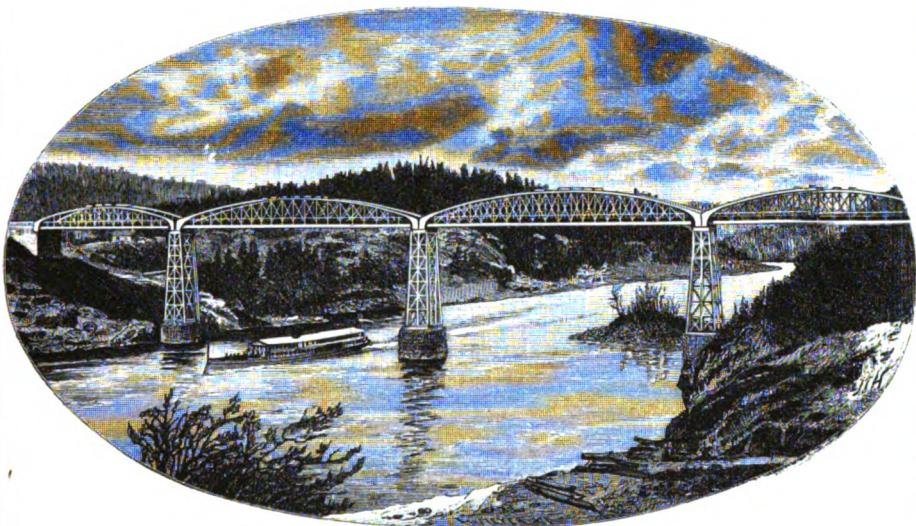
**THE FINNBODA SLIPWAY & DOCK YARD, STOCKHOLM,**

where all kinds of shipbuilding and repairing are executed.

**The Bergsund Engineering and Shipbuilding C:o, Lim.,**

**STOCKHOLM.**

BERGSUNDS MEKANISKA VERKSTADS AKTIEBOLAG,  
STOCKHOLM.



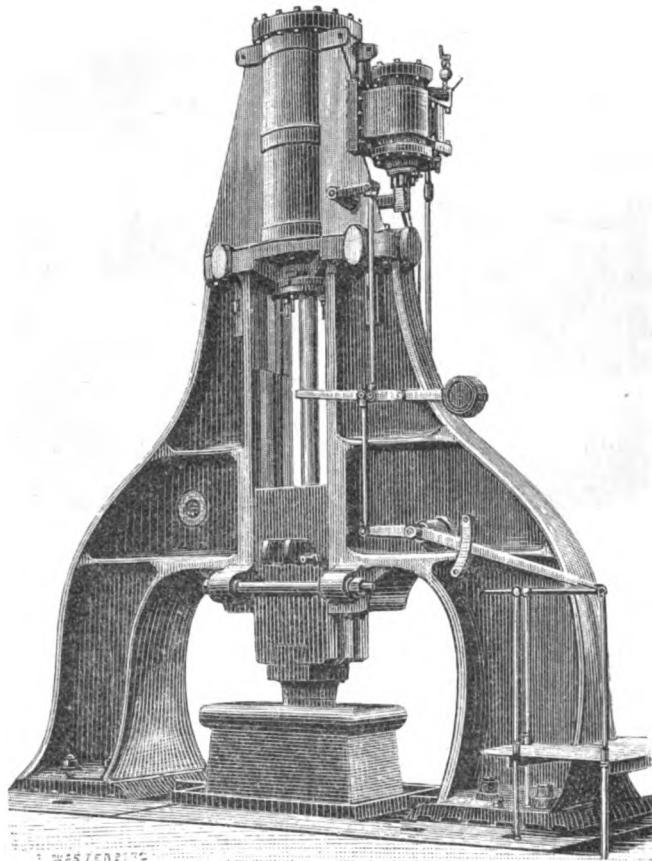
MANUFACTURERS OF  
Marine Engines, Stationary Engines,  
Steam Boilers, Railway Bridges,  
Pumping Engines, River Steamers,  
and other engineering work as well as all kinds of  
**Castings.**

The Bergsund Engineering and Shipbuilding C:o, Lim.,

STOCKHOLM.

J. & C. G. Bolinders Mek. Verkstads Aktiebolag,

— STOCKHOLM —

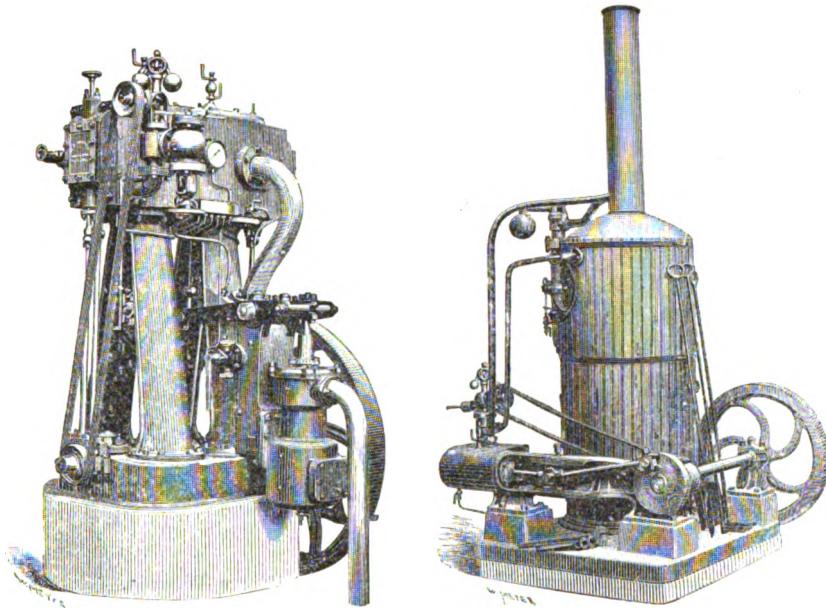


**STEAM HAMMERS of different sizes;**  
**HYDRAULIC PRESSES and LIFTS;**  
**TURBINES and WIND MOTORS;**  
**LIFTING JACKS and CRANES;**  
**PUMPING MACHINERY of all kinds;**  
**BARK MILLS;**  
**HEATING APPARATUSES;**  
**STEAM KITCHENS.**

J. & C. G. BOLINDERS MEK.  
VERKSTADS AKTIEBOLAG,

STOCKHOLM, SWEDEN.

ESTABLISHED IN 1845.



MAKERS OF

**Steam Engines** and **Boilers** of all dimensions;

**STEAM BOATS; STEAM PUMPS;**

**SAW MILLS** and **WOODWORKING MACHINERY** (complete plants)

with all the latest improvements and including

*Log and Deal Frames,*

CIRCULAR SAWS, STAVE SAWS,

Planing Machines, Saw Sharpening Machines;

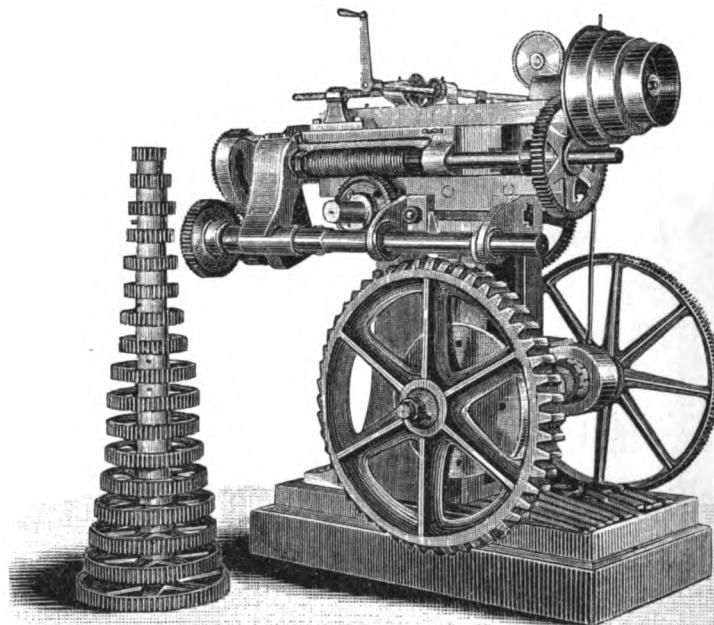
**CORN GRINDING MILLS**

on the most approved systems, and

**STONE WORKING MACHINERY.**

J. & C. G. BOLINDERS MEK. VERKSTADS AKTIEBOLAG,

STOCKHOLM.



Large Universal Machine for making Worm Wheels.

Manufacturers of

Machine Tools,

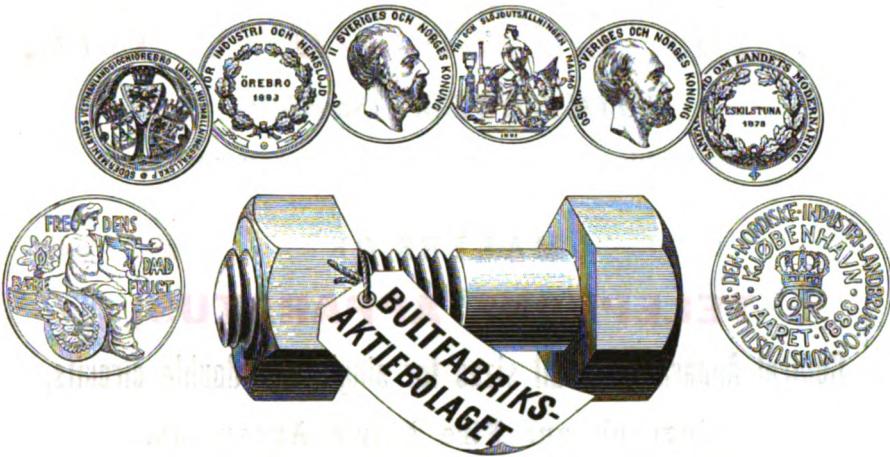
E S P E C I A L L Y

Milling Machines and Worm Wheel Machines;

*founders*

of all kinds of **CASTINGS**.

Kitchen Ranges, Stoves, Fountains, Balconies, Stairs,  
Windows, Fences, Sepulchral Monuments etc.



# Bultfabriks Aktiebolaget, HALLSTAHAMMAR, SWEDEN.

(The Hallstahammar Bolt & Nut Works Co, Limited.)

— — — ♦ MAKERS OF ♦ — — —  
**BOLTS and NUTS of all kinds;**  
**BOILER, SHIP and BRIDGE RIVETS;**  
*RAILWAY SPIKES of all dimensions etc.*

Price Lists sent on application. ♦ Orders and Enquiries to be addressed to

Bultfabriks Aktiebolaget,  
Hallstahammar, Sweden.



# *L. M. Ericsson & Co.,*

*STOCKHOLM (Sweden).*

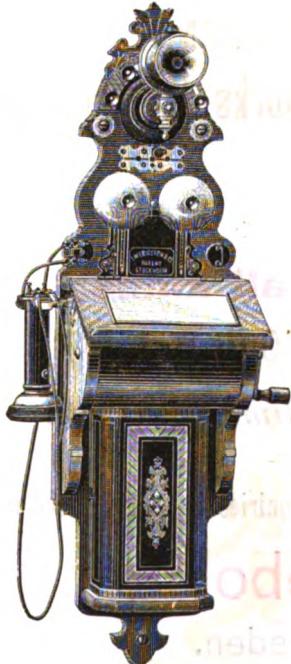
Telegraphic address: MIKROFON, STOCKHOLM.

\* — ◊ MAKERS OF ◊ — \*

## TELEPHONE APPARATUS,

Central Apparatus of all sizes for single and double circuits,  
Telegraph and Fire Alarm Apparatus.

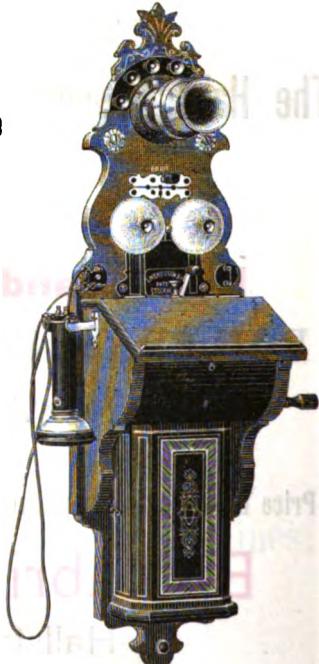
Speciality: Telephonic Plant.



No. 2.  
Telephone Apparatus  
for terminal station.

Complete Catalogues

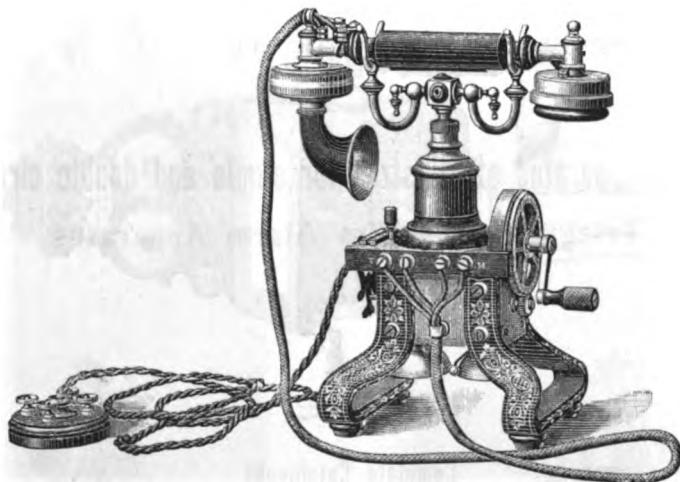
in  
Swedish,  
German,  
English,  
French  
and  
Italian  
forwarded  
on application.



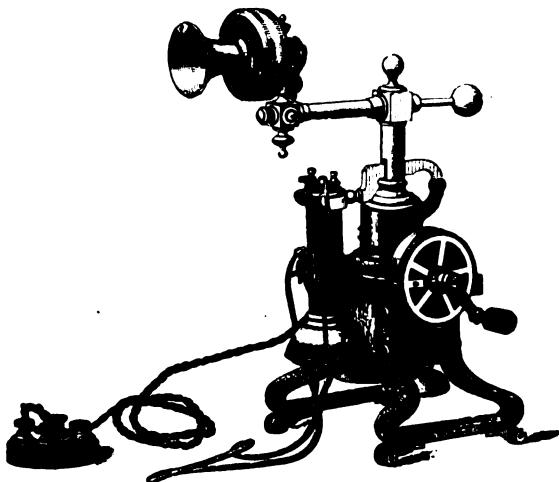
No. 3.  
Telephone Apparatus  
for intermediate station.

**L. M. Ericsson & Co., Stockholm.**

*L. M. Ericsson & Co.,*  
*STOCKHOLM (Sweden).*



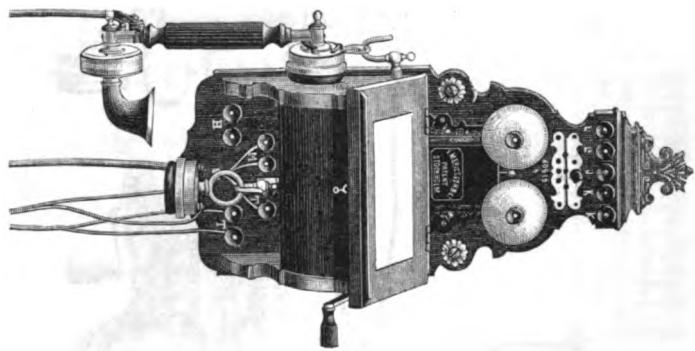
*N:o 7.*  
Table Telephone Apparatus.



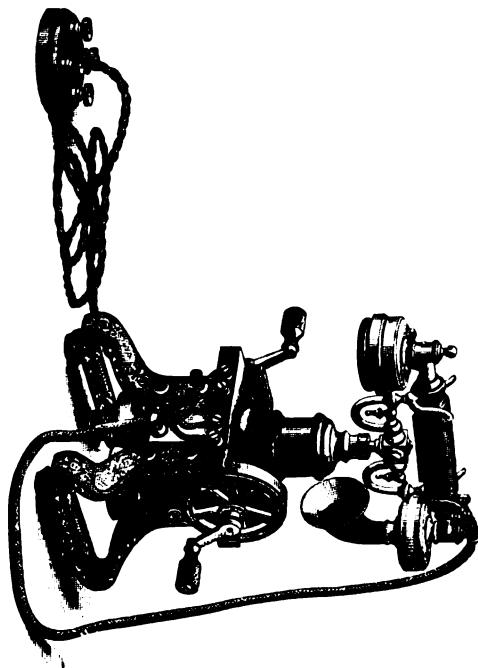
*N:o 6.*  
Table Telephone Apparatus.

L. M. Ericsson & Co., Stockholm.

*L. M. Ericsson & Co.,*  
*STOCKHOLM (Sweden).*



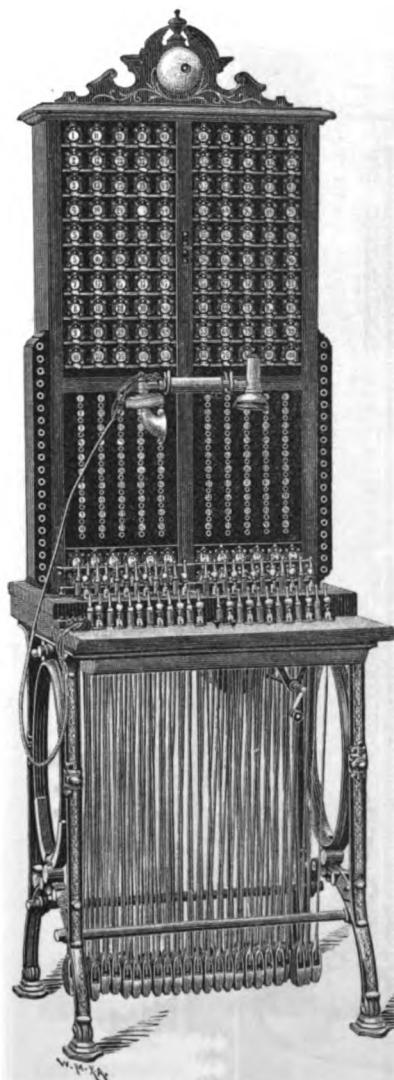
No. 4.  
Telephone Apparatus for terminal station.



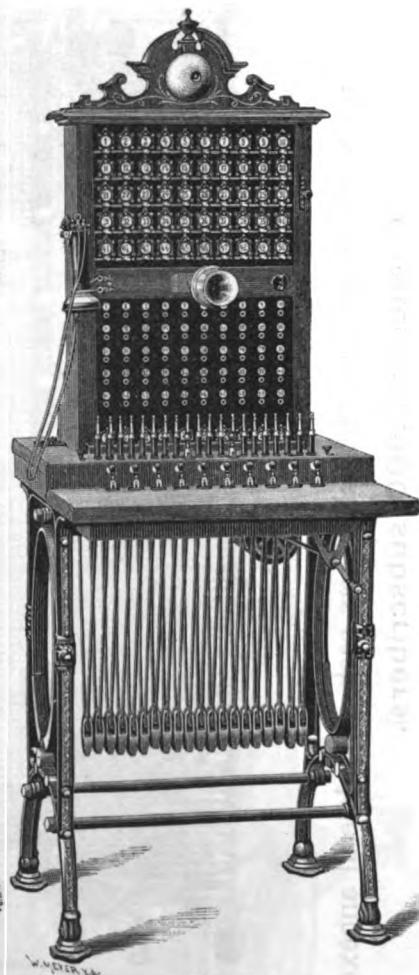
No. 8.  
Table Telephone Apparatus with two handles.

**L. M. Ericsson & Co., Stockholm.**

*L. M. Ericsson & Co.,*  
*STOCKHOLM (Sweden).*



*No. 48.*  
Switch Board for 100 single circuits.

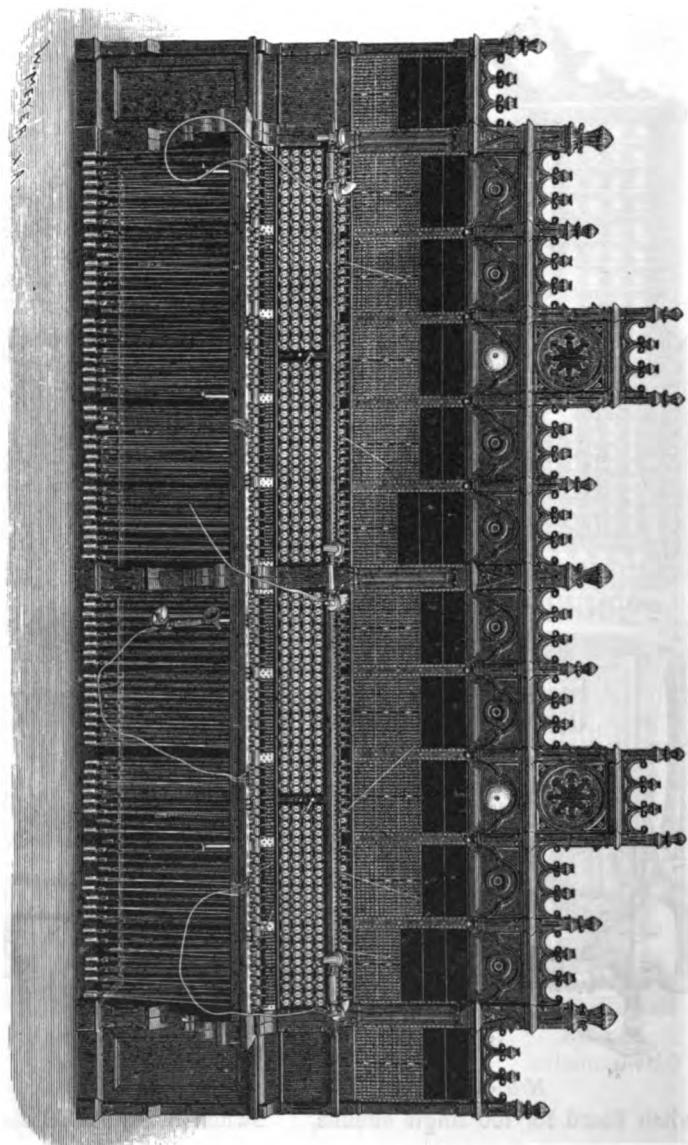


*No. 59.*  
Switch Board for 50 double circuits.

**L. M. Ericsson & Co., Stockholm.**

# *L. M. Ericsson & Co.,*

*STOCKHOLM (Sweden).*

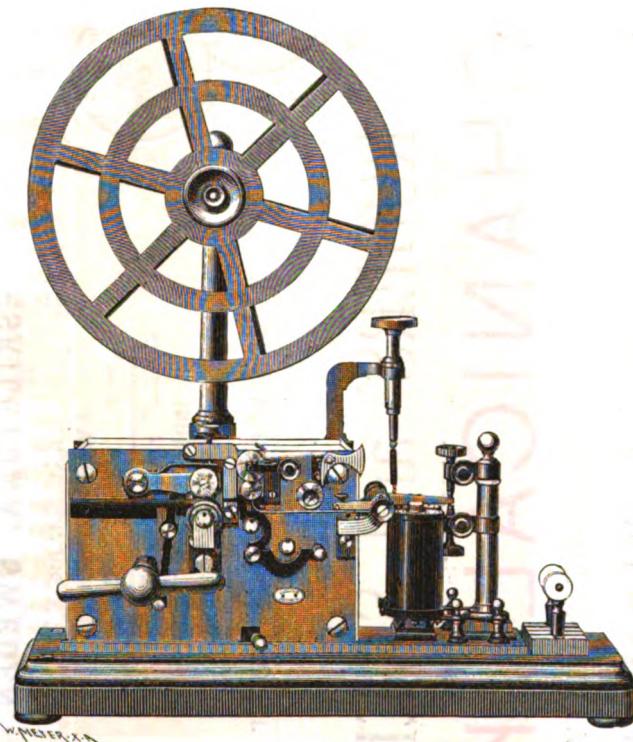


Two multiple Switch Boards, for 200 subscribers each, with lateral annexes.  
(Capacity: 2,500 subscribers).

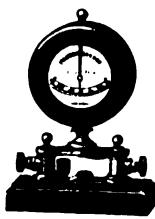
**L. M. Ericsson & Co., Stockholm.**

# *L. M. Ericsson & Co.,*

*STOCKHOLM (Sweden).*



*N:o 90.*  
Telegraph Apparatus (system Morse).



*N:o 95.*  
Galvanometer.



*N:o 94.*  
Lightning Protector.



*N:o 93.*  
Key.

**L. M. Ericsson & Co., Stockholm.**  
**(SWEDEN).**

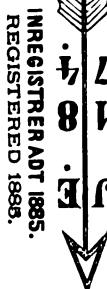
Telegraphic address: MIKROFON, STOCKHOLM.

JOH. ENGSTRÖM,

ESKILSTUNA, SWEDEN.

TRADE MARK

WARUMÄRKE



REGISTERED 1885.



Manufacturer and Exporter  
RAZORS — of —  
ROGERS, and SWEDISH

# MECHANICAL KNIVES,

ALL OF EXCELLENT QUALITY.

EXPORT TO MOST PARTS OF THE WORLD.

PRIZE MEDALS at Philadelphia 1876, Paris 1878, Eskilstuna 1878 and Malmö 1881.



# Eskilstuna Jernmanufaktur Aktiebolag,

— ESKILSTUNA. —

Address for letters & telegrams:

JERNBOLAGET, ESKILSTUNA.

Manufacturers and Merchants.

Table Cutlery,

Razors,

Scissors

Pocket Knives

etc.



etc.

Every description of Iron and Steel Hard Ware for household and industrial requirements.

(SHEFFIELD GOODS.)

**PLEASE WRITE FOR PRICE LISTS.**

# Fagersta Bruks Aktiebolag,

— WESTANFORS, SWEDEN. —

— Manufacturers —

— OF —

Saw Blades,

SLEDGES, HAMMERS,

Picks, Wire Rope &c.

— Please see pages 55 and 56. —

Gadö Fabriks Aktiebolag,

WALBO, SWEDEN.

MANUFACTURERS

OF

FILES AND RASPS

OF ALL DIMENSIONS.

Orders and Enquiries to be forwarded to

Gadö Fabriks Aktiebolag,

WALBO, SWEDEN.

GÖTEBORGS MEKANISKA VERKSTADS AKTIEBOLAG,

(THE GOTHEMBURG ENGINEERING WORKS C:o, LIMITED),

Gothenburg.

MAKERS OF

Steam Engines, Boilers, Turbines, Donkey Engines and Pumps.

AGRICULTURAL IMPLEMENTS:

Ploughs, Harrows, Sowing and Thrashing Machines etc.

OWNERS of a DOCK YARD with three SLIPS,  
newly built and in complete order.

A large Foundry, belonging to the works, facilitates a speedy  
execution of orders for Castings of every description.



Manufacturers by machinery  
of first class **LEVER KEYLESS**  
**WATCHES** in gold or silver  
cases.

All the Watches of  
new construction, du-  
rability, first class make  
and high finish.

16 LETTERS OF PATENT  
granted in all the  
principal countries.



#### The telephone is incomplete without The "TELUR" and the "TELECRON"

The Telur is a time-keeper for telephonic conversation, for experiments and for controlling purposes in manufactures &c.  
The Telecron is an appendix to the telephone, which, in the absence of the owner of the latter, automatically informs all people, pulling the telephone, of the exact time — the date as well as the hour of the day — when the owner may be telephoned to.  
We are the sole makers of these two patented and registered apparatuses.

Indispensable to all who use the telephone.

Prospectuses free. Depots in all large places in Europe and America.

Correspondence in French, English,  
German and Swedish.

The Halda Watch Manufacturing Co., Lim.,  
Svängsta, Sweden.

The newest and most modern ma-  
chinery and working system applied.  
160 machines, driven by water and  
steam, turn out daily 6000 parts of  
watches.

All the Watches are  
in a perfect and most  
practical, patented man-  
ner adjusted from the  
dust cap.

THREE GOLD MEDALS  
received at different  
Exhibitions.



K. G. Hammarsköld,

— Stockholm, Sweden. —

— EXPORTER —

OF

## Iron and Steel Hardware

of all kinds and of  
the very best Swedish makes.

Speciality:

Anvils, Picks, Hammers, Sledges  
&c.

AND OF—

## Agricultural Implements and Machinery.

Speciality:

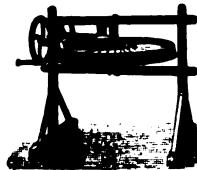
Ploughs and Dairy Machinery  
and Implements.

# CARL HOLMBERGS MEK. VERKSTAD,

→ LUND, SWEDEN. ←



## SPECIALITY: Dairy Machines:



DAIRY STEAM ENGINES + BOILERS +  
CHURNS + BUTTER WORKERS + BUTTER THROUGHS + MILK HEATERS +  
MILK PUMPS + CREAM RECEIVERS + CHEESE MOULDS +  
CHEESE PRESSES + CHEESE MILLS &c.

*Steam  
Engines,  
of all sizes, simple,  
solid, effective,  
durable and cheap.*



on the flue and tube  
system, made of  
first class  
Swedish materials.

## Makers of

PEAT LITTER PLANTS — GRINDING MILLS — SAW MILLS —  
BRICKMAKING MACHINERY — CORN CRUSHERS.



Large stock of

**PUMPS,**  
Iron Stoves, Ovens  
and all kinds of  
Ironmongery Castings.



CARL HOLMBERGS MEKANISKA VERKSTAD,  
LUND, SWEDEN.

# HUSQVARNA VAPENFABRIKS AKTIEBOLAG, JÖNKÖPING, SWEDEN.



## CASTINGS:

Ornamental and Decorative Articles and Objects of Luxury,  
*SUCH AS*  
***SHIELDS, PLATES, "ETAGÈRES" &c.***  
**HOUSEHOLD and KITCHEN UTENSILS &c.**



## MACHINERY FORGINGS

AND OTHER

## IRON GOODS,

*made to models and drawings.*

---

The annual Value of the Manufacture  
exceeds one million kronor.

---

Highest awards received at EXHIBITIONS in  
**Paris, London, Moscou,**  
**Copenhagen and Stockholm etc.**

Illustrated catalogues forwarded on application.

The Husqvarna Fire Arms Manufacturing Company, Lim.,  
JÖNKÖPING, SWEDEN.

Husqvarna Papensfabriks Aktiebolag,

JÖNKÖPING, SWEDEN.

OWNERS OF

The Husqvarna Gun Manufactory,

privileged by a Royal grant of 1682,

Sewing Machine Manufactory,

AND

*Foundry and Enamelling Works.*

MAKERS OF

GUNS

on the REMINGTON,  
LEFAUCHEUX, TOP-LEVER,  
MARTINI-HENRY  
and other systems.

SEWING MACHINES

on the SINGER,  
GROVER & BAKER  
and  
WHITE systems.

CASTINGS,

for inst. COOKING RANGES and STOVES, burning either coal or wood.

HEATING STOVES

of different designs, of which are specially  
recommended the so called

MAGAZINE STOVES

and portable ECONOMISERS.

# HULTS BRUK,

ÅBY, Ö. S. B., SWEDEN.

N:o 27.



N:o 1.



N:o 77.



N:o 79.



N:o 42.



Trade Mark.

MANUFACTURERS

OF ALL KINDS

—○ OF ○—

**AXES, ADZES and HATCHETS,**

to suit every market.

**HIGHEST AWARDS.**

Illustrated Catalogue

on Application.

N:o 75.



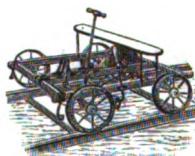
N:o 70.



N:o 80.



N:o 8.



N:o 5.



And also

MANUFACTURERS

OF ALL KINDS

—○ OF ○—

**SECTION-, TELEGRAPH- and INSPECTION-**

**PUSH HAND CARS**

FOR

**RAILWAYS.**

Illustrated Catalogue on Application.

N:o 4.



N:o 11.



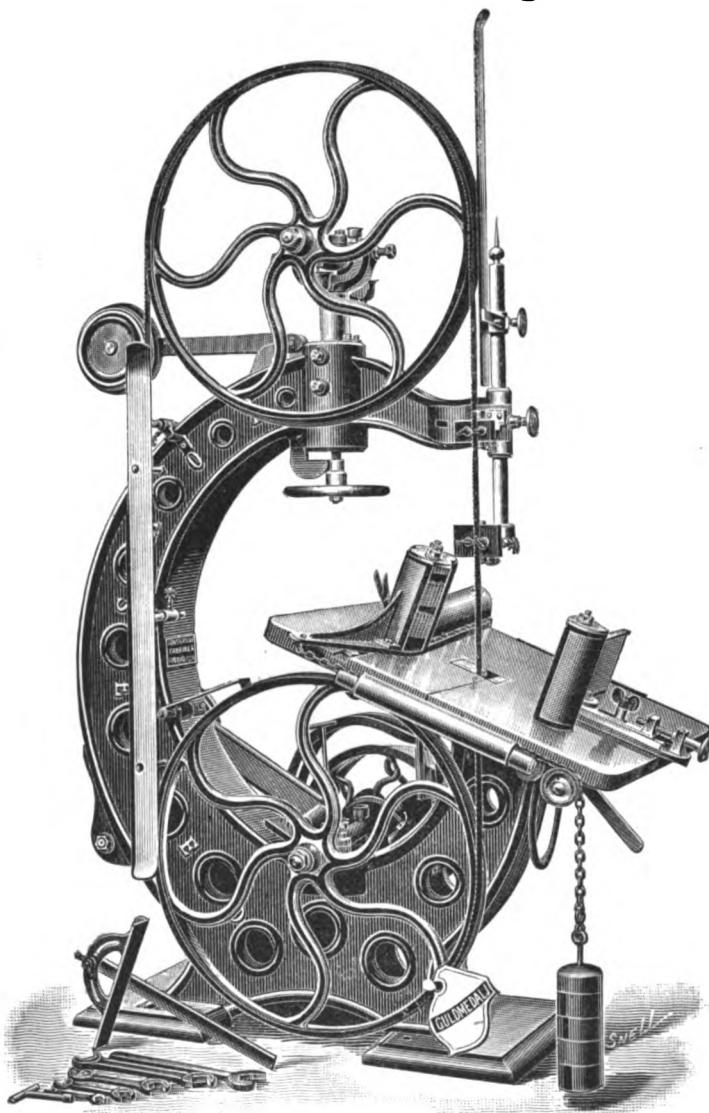
# JONSEREDS FABRIKERS AKTIEBOLAG,

JONSERED,  
GOTHENBURG, SWEDEN.

FOUNDED 1882.

Telegraphic Address: JONSEREDS, GOTHENBURG.

Manufacturers of Wood Working Machinery.



BAND SAW.

Please see page 119.

# Jonsereds Fabrikers Aktiebolag

JONSERED,

—& GOTHENBURG, —  
SWEDEN.

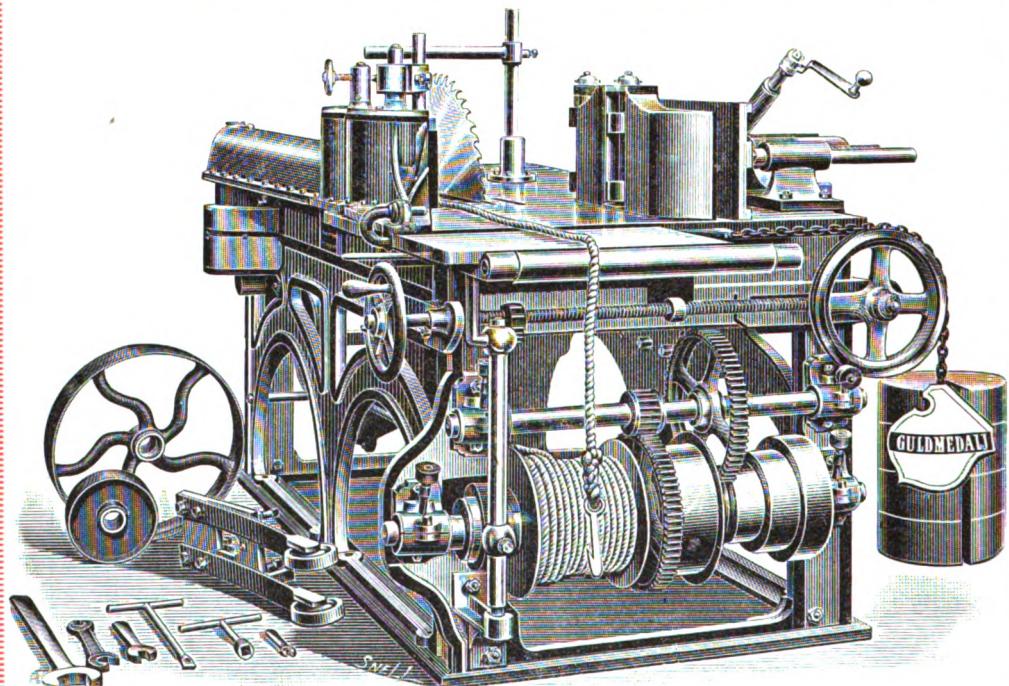
Founded 1832,

Telegraphic Address: JONSEREDS, GOTHENBURG.

Manufacturers

—♦ of ♦—

## Wood Working Machinery.



CIRCULAR SAW.

Please see page 119.

# JONSEREOS FABRIKERS AKTIEBOLAG, GOTHENBURG.

Makers of the following articles, which have received First Prizes, Gold or Silver Medals, at Exhibitions in London, Liverpool, Vienna, Paris, Copenhagen, Stockholm etc.

LOG and DEAL SAWING FRAMES.

CIRCULAR SAWS.

BAND SAW MACHINES.

PLANING and MOULDING MACHINES.

MORTISING and TENONING MACHINES.

JOINERY MACHINERY of all kinds.

## Kristinehamns Mek. Verkstad,

KRISTINEHAMN, SWEDEN.

Manufacturers of

**PORTABLE ENGINES.**

Great saving of fuel. Large fire box enabling the use of saw dust as fuel.

Steady motion by means of an effective expansion governor.

Easily managed and durable.

**FIXED STEAM ENGINES**

with horizontal Boilers for Saw Mills and Grinding Mills.

**DEAL FRAMES and EDGE SAWS.**

All enquiries promptly attended to.

**CARL JACOBSEN & C:o,**

EXPORT & IMPORT MERCHANTS & ENGINEERS,  
STOCKHOLM.

General Agents for  
**AKTIEBOLAGET EXTRACTOR.**



**The Butter Extractor.**

The only existing machine for extracting butter direct from the milk.

# Carl Jacobsen & C:o,

EXPORT & IMPORT MERCHANTS & ENGINEERS,

—  STOCKHOLM.  —

GENERAL AGENTS FOR

## AKTIEBOLAGET EXTRACTOR.

### THE BUTTER EXTRACTOR

— is a —

### CENTRIFUGAL MACHINE,

that extracts all the Butter direct and continuously from the milk, thus by a single operation giving as final products the finest sweet butter and sweet skim milk;

or, if desired, it is used as a

### CREAM SEPARATOR,

separating the cream direct from the milk.

No cream vat, —  No churn is used.

### The Butter Extractor

has been awarded

The only highest Award of Honor  
for dairy machines

(large silver cup and diploma)

Royal Agricultural Exhibition, Gothenburg, Sweden, 1891.

Gold medal and diploma of honor.

Royal Agricultural Exhibition, Westerås, Sweden, 1889.

Gold medal.

Bay State Agricultural Society, Boston, Mass., U. S. A., 1889.

Gold medal and diploma of honor.

Royal Agricultural Society, Vienna, Austria, 1890.

Silver medal.

Gouverneur A. & M. Society. Gouverneur, N. Y., U. S. A., 1890.

Silver medal.

Royal Agricultural Society's Bi-centennial Fair, Windsor, England, 1889,

Over 162 competitors.

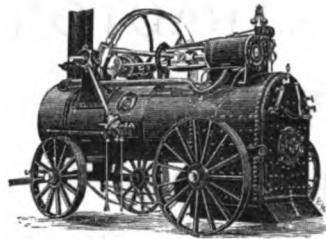
Complete plans and estimates for Dairies on every system free on application.

# Carl Jacobsen & C:o,

Stockholm (Sweden) and Helsingfors (Finland),

Export and Import Merchants and Engineers.

General Agents for



Portable and Semi-Portable  
**STEAM ENGINES**

— and —  
**TRASHING MACHINES,**

manufactured by

**Munktells Mek. Verkstads Aktiebolag;**

Horizontal and Vertical

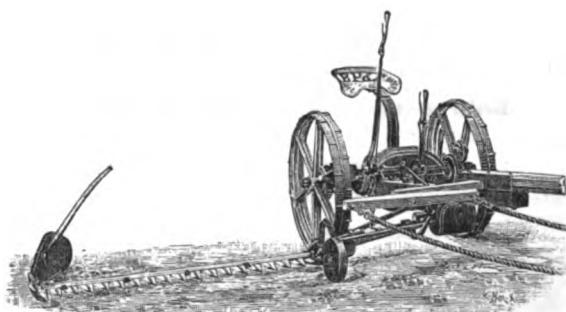
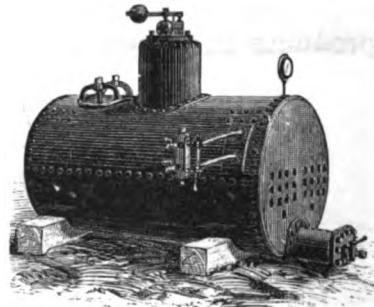
**BOILERS**

— and —

**STEAM ENGINES,**

manufactured by

**Aktiebolaget Mek. Verkstaden Vulkan;**



Mowers and Reapers, for one or two horses,

manufactured by

**Aktiebolaget Palmcrantz & C:o.**

# Carl Jacobsen & C:o,

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**Export and Import Merchants and Engineers.**

General Agents for

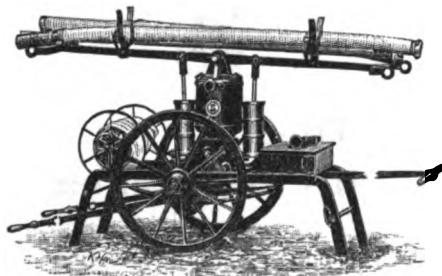
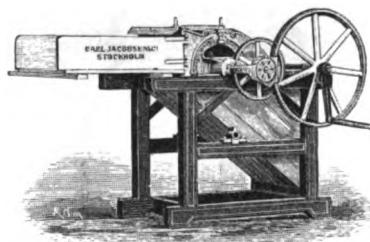
**Pin-Trashing Machines**

— and —

**Horse Gears,**

manufactured by

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**Fire Engines, Ladders etc.,**

manufactured by

**Joh. R. Holmgrens Sprutfabrik;**

**Agricultural Implements**

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**Dairy Supplies,**

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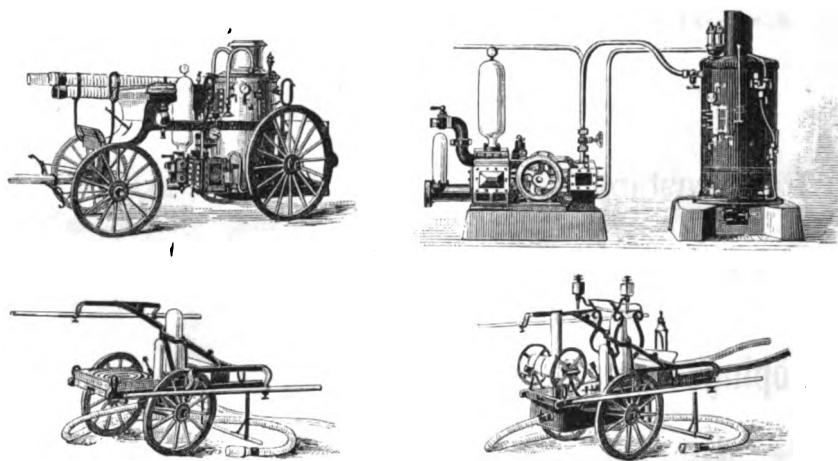
**Fabriken Ceres.**



*Complete estimates and plans for all kinds of industrial establishments, such as Saw Mills, Flour Mills, Engineering Workshops etc., fitted with Swedish machinery from makers of the highest renown, to be had free on application.*

**Catalogues and Price Lists sent free.**

# LUDVIGSBERGS VERKSTADS AKTIEBOLAG, STOCKHOLM, SWEDEN.



Recommend their  
Portable and Fixed  
"Ludvigsbergs" Steam Fire Engines,

which have received Prizes at home and abroad and are now in use  
in Sweden, Norway, Denmark, Finland, Russia, Spain,  
Italy, Belgium and Germany.

The "Ludvigsbergs" Steam Fire Engines are provided with:  
**exceptionally Large Boilers**, having abundant steam and water surfaces, and on account thereof being unsurpassed, as regards easy management and saving of fuel;

**an excellent Pump Construction** with effective and easily accessible valves (the engines may consequently work with the longest hoses and the highest pressure);

**an automatical pressure Regulating Valve**, by means of which the fireman, who directs the spout, can work independently of the engine man and, by means of the controlling nozzle moderate the water jet, as the occasion may require, from nought to the maximum effect.

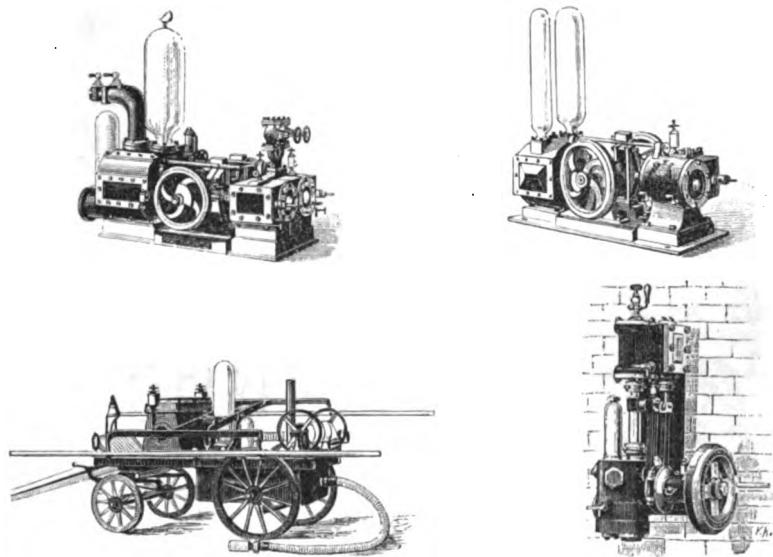
First Prize in Stockholm 1886, in Copenhagen 1888, and in Gothenburg 1891.  
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Quotations and illustrated Lists free on application.

Telegraphic Address:  
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# LUDVIGSBERGS VERKSTADS AKTIEBOLAG,

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Recommend their

## "LUDVIGSBERGS" STEAM PUMPS

for high or low pressure;

## COMPOUND PUMPS

with or without Condensor;

## LUDVIGSBERGS DONKEY PUMPS;

## LUDVIGSBERGS COMBINED SUCTION and PRESSURE FIRE ENGINES, to be worked by hand;

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of every description.

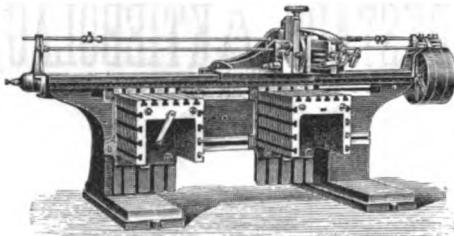
First Prize in Stockholm 1886, in Copenhagen 1888, and in Gothenburg 1891.

Gold Medal in Barcelona 1888, and in Gothenburg 1891.

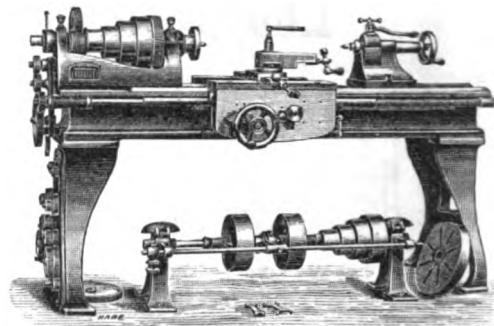
Quotations and illustrated Lists free on application.

Telegraphic Address:

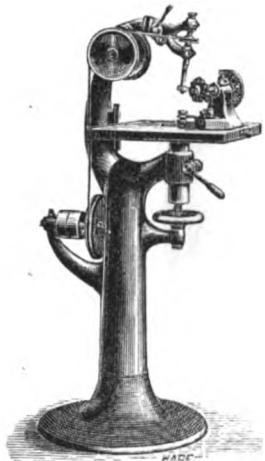
*Ludvigsbergs, Stockholm.*



30 Inch. Side Planing Machine.



Engine Lathe. 16 Inches Swing.



Universal Cutter Grinder.

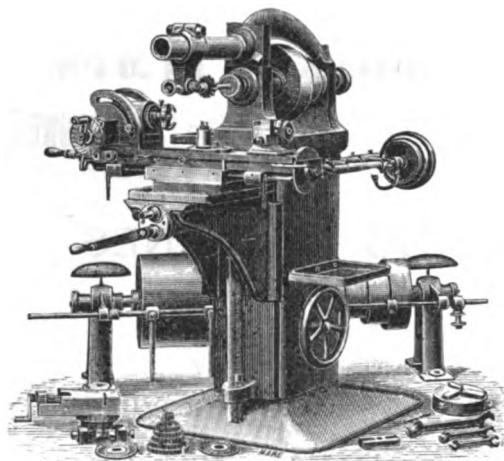
# KÖPINGS MEKAN AKTIE

*Founded 1856.*

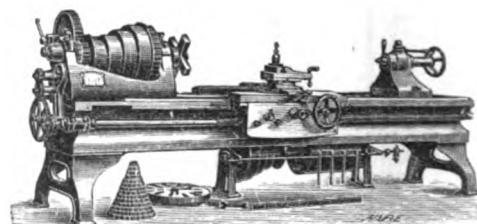
KÖPING,

Spec  
FIRST CLASS M

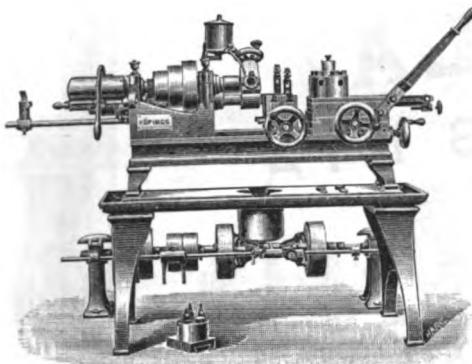
Photos and Pri



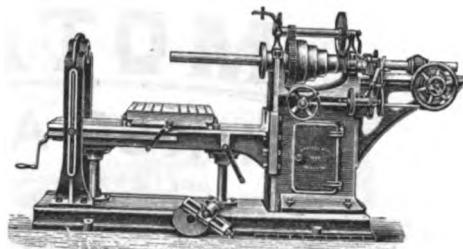
Universal Milling Machine.



Engine Lathe. 26 Inches Swing.



Screw Machine.



Horizontal Boring Machine.

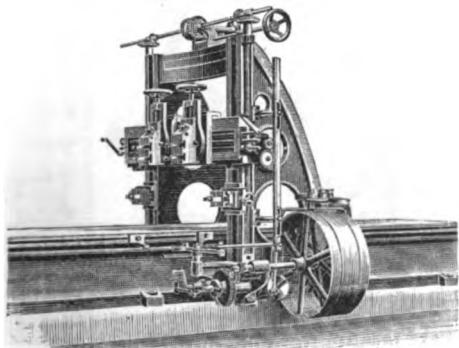
# NISKA VERKSTADS BOLAG,

SWEDEN.

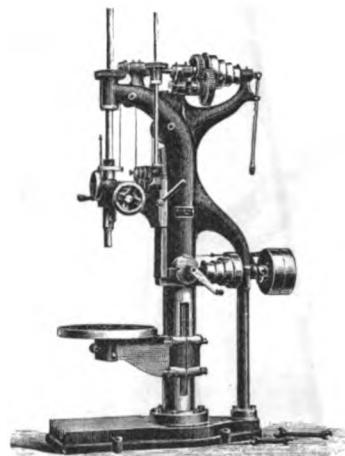
*Telegraphic Address:  
Verkstaden, Köping.*

ality:  
**MACHINE TOOLS.**

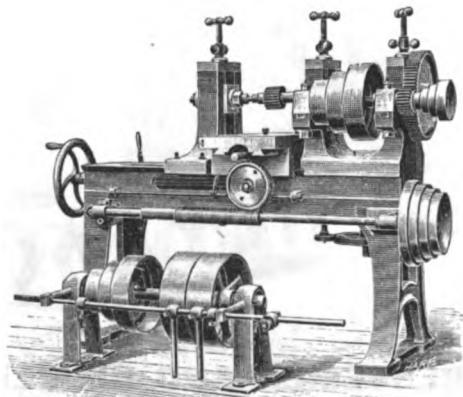
ee on application.



4' x 4' Planer.



14 Inch. Vertical Drill.



Milling Machine.

# MOTALA VERKSTADS NYA



## AKTIEBOLAG

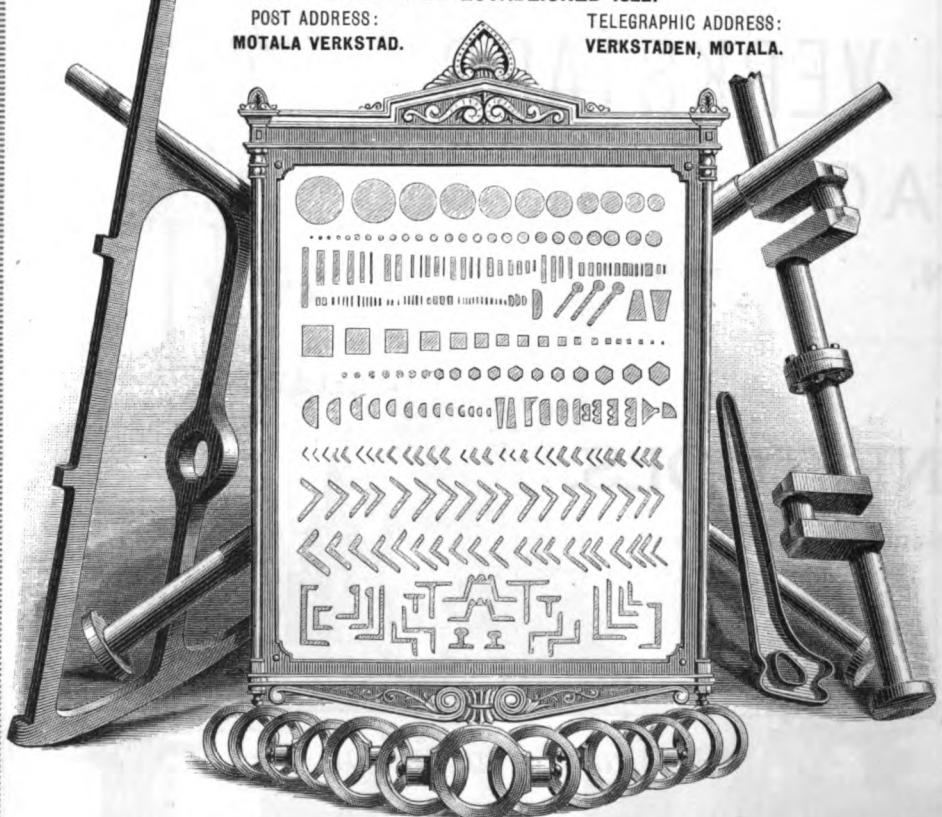
(MW)



ORIGINALLY ESTABLISHED 1822.

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MOTALA VERKSTAD.

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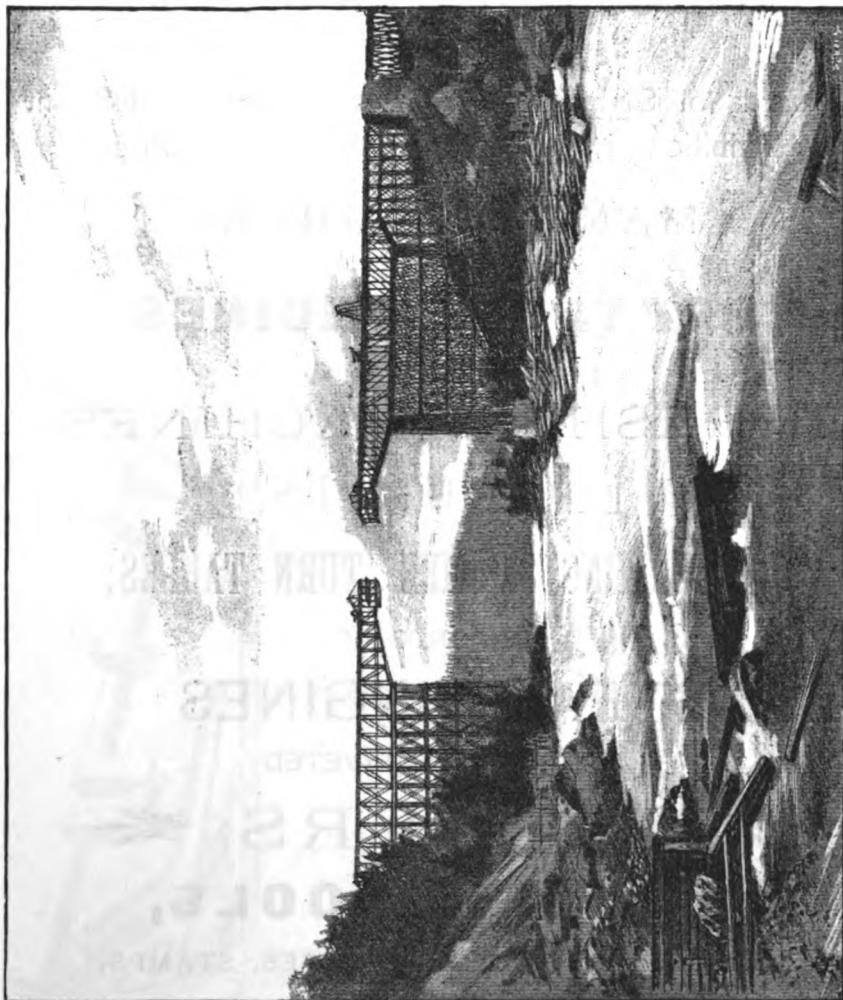


MANUFACTURERS OF  
**BESSEMER AND SIEMENS MARTIN STEEL,**  
PLATES, ANGLES, BARS AND FORGINGS.

# MOTALA VERKSTADS NYA AKTIEBOLAG.

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The new railway bridge at Foramo over the Ångerman river in Sweden.

Manufacturers of

Railway Bridges, Steamers, Stationary Engines, Steam Boilers,  
**Locomotives, Hydraulic Machinery**  
— and —  
all similar engineering work.

Munktells Mek. Verkstads Aktiebolag,

— ♫ ESKILSTUNA. ♫ —

Upwards of Sixty Prize Medals awarded at different Exhibitions in Sweden and foreign Countries.

MANUFACTURERS

OF

**PORTABLE ENGINES**

• • • AND • • •

THRASHING MACHINES;  
LOCOMOTIVES,

LOG SAWING FRAMES, TURN TABLES;

ALL KINDS OF

**STEAM ENGINES**

AND MACHINE RIVETED

— ♫ BOILERS; ♫ —

**MACHINE TOOLS,**

VIZ. TURNING LATHES, PRESSES, STAMPS,  
HAMMERS, DRILLING, SCREWING and SHAPING MACHINES &c. &c.

*CASTINGS TO ORDER.*

*EXCELLENT WORKMANSHIP AT A  
LOW PRICE.*

# E. A. NÆSMAN & C:o,

ESKILSTUNA.

ESTABLISHED 1846.

MANUFACTURERS

OF

DOOR LOCKS, DOOR HANDLES, FURNITURE LOCKS, HEEL IRONS  
AND  
CANDLESTICKS.

Hjalmar Petersson & C:o,  
KARLSTAD.



on account of its ingenious construction, given general satisfaction both at home and abroad, during the

*The patent »Congo« Chair,*  
made of solid Birch, besides being very nice in appearance, is so ingeniously constructed, that by a single grip it can be put up and carried along quite as conveniently as a plaid, and, by another sharp pull at the back, be brought back to its former position as a chair.

This chair, suitable for using on balconies, verandas and at picnicks, is quite indispensable for travellers in the southern climates.

In order to ensure the genuine article please observe that each chair is stamped: »Congo Chair, Hjalmar Petersson & C:o, Karlstad, Sweden.«

The chair has met with deserved attention not only in Sweden and other European countries, but also in Australia, North and South America etc.

*The New Folding Chair,*

which also, can be used as Easy Chair and Bedstead, is manufactured of solid Birch, can be carried under the arm at outings, is ornamental, solid and cheap, and has, during the years it has been in the market.

Each chair is stamped:

**Hjalmar Petersson & C:o,**  
**Karlstad, Sweden.**



C. E. PETTERSSONS SÖNER,

LÅNGÖ BRUK,

MORA, SWEDEN.



Manufacturers of



Scythes.

First class Prizes have been awarded this make not only in Sweden and Denmark, but also in Russia, Austria, the United States of America, the Argentine Republic etc.

All kinds of SCYTHES manufactured from the very best materials.

Lowest prices quoted on application.

Enquiries with illustrations or patterns to be addressed to our Agents, or to us direct, under the above address.



W. Aug. Sandbergs Manufaktur-Aktiebolag,

MOTALA, SWEDEN.

(ESTABLISHED 1830.)

Manufacturers  
as a speciality

— of —

Steel Shovels and Steel Spades.

The largest Manufactory of its kind in Scandinavia.

Export to most Countries in Europe and to their Colonies.

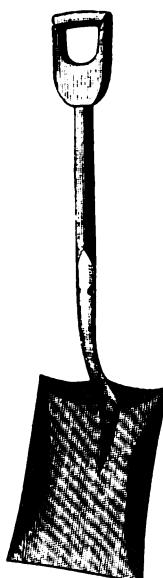
Contractors to the Swedish State Railways and several private Railway Companies.

Over 100 home and foreign patterns in stock.

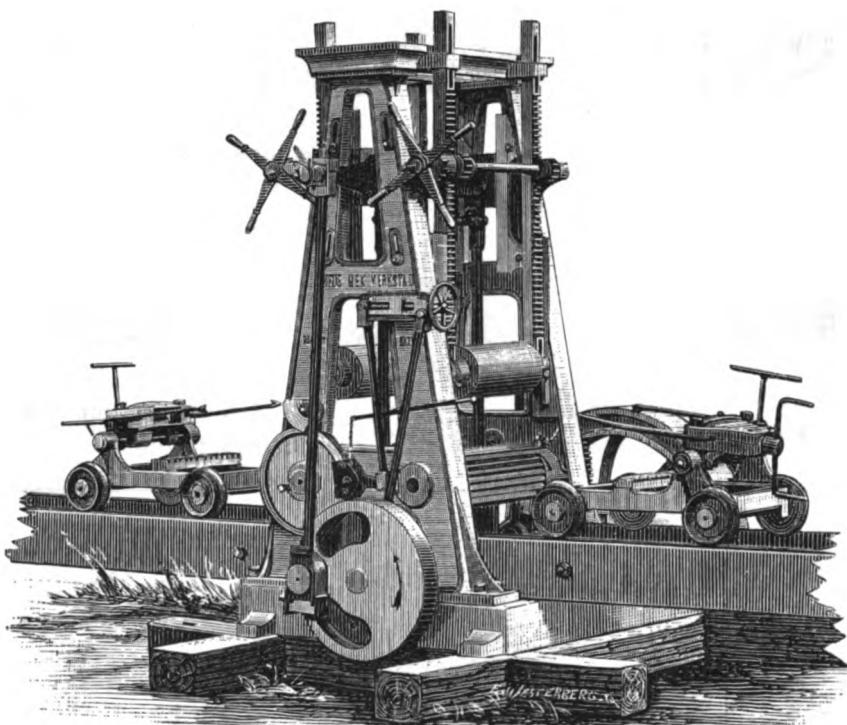
Only, first class Ashwood Handles used.

Lowest price. Best quality.

Compete successfully with any foreign makers.



# Sköfde Mekaniska Verkstads Aktiebolag, SKÖFDE, SWEDEN.



MANUFACTURERS

— OF —

One storied Timber Saw Frames,

AWARDED

A Gold Medal at Sundsvall 1882, A First Class Medal at Åbo 1881,  
and, besides, First Class Medals at all Swedish Shows,  
where the Saw Frames have been exhibited.



# Stridsberg & Biörck, Trollhättan, Sweden.

Manufacturers

— of —

all kinds of

SAWS,  
MACHINE-  
KNIVES,  
SPADES,  
SHOVELS  
and  
FILES.



TRADE-

MARK.



Makers

— of —

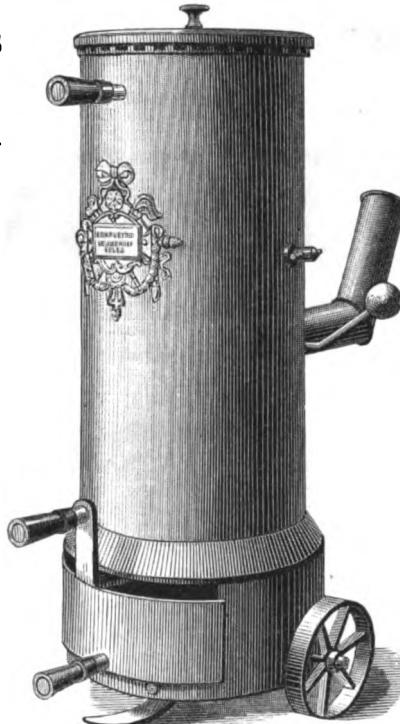
STEEL SHEETS,  
IRON SHEETS,  
BAR IRON,  
TOOL STEEL  
(DIAMOND-STEEL),  
SIEMENS-  
MARTIN  
CASTINGS  
and  
INGOTS.



SÖDERBLOMS  
ÖJUTERI  
AKTIEBOLAG,  
ESKILSTUNA, SWEDEN.

*Manufacturers and Exporters of*  
**THE SCANDINAVIAN STOVES.**

This stove eclipses  
all others on  
account of its Eco-  
nomy in Fuel,  
Absence of  
Smoke,  
Uniformity  
of  
Temperature  
and the  
slight Attention  
required.



No. 1 STOVE, 3'. 3" high  $\times$  12  $\frac{1}{2}$ " diam.; heats 9000 Cubicfeet.  
No. 0 STOVE, 2'. 6" "  $\times$  9  $\frac{1}{2}$ " " " 1000 "

The Stoves are strongly recommended for use in  
Dwellinghouses, Bedrooms, Halls, Chapels, Hospitals,  
Barracks, Sittingrooms, Schools, Woorkshops etc.

**Over 16,000 Stoves in use.**

This stove completely consumes the smoke, is entirely free from bad smell and can be kept in constant use for several months. The Stove No. 1, placed in the middle of 3 to 4 fairsized rooms of together about 9,000 cub. feet of air, while keeping the rooms warm during 24 hours, does not consume more than one cubicfoot of coke or a third one of anthracitecoal.



D. HALD & C:o,

ENGINEERS,

STOCKHOLM.

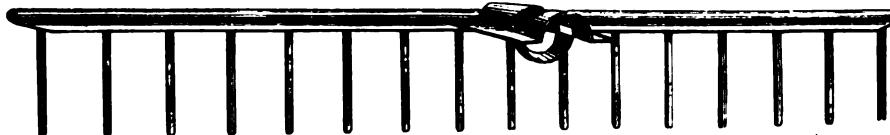
Manufacturers of

Bullet and Ammunition Machinery.

(Please refer to page 52 b.)

W. TESCH,

STOCKHOLM.



Galvanised Steel Hay Rakes

and

Garden Rakes.

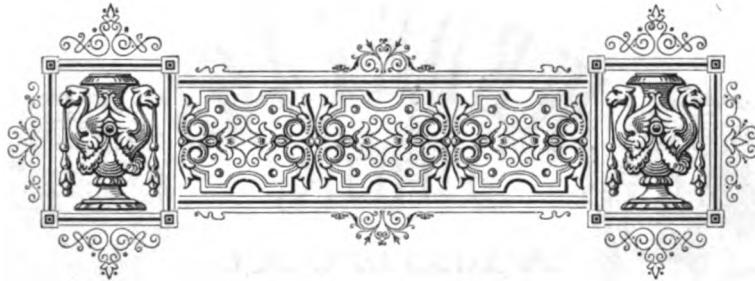
N. B. Unsurpassed in strength; do not rust.

Price with 12 teeth 4/- per dozen

> 14 > 4/6 d. > >

> 16 > 5/ > >

Liberal discount to the trade.



# C. O. Öberg & C:o,

— ESKILSTUNA —

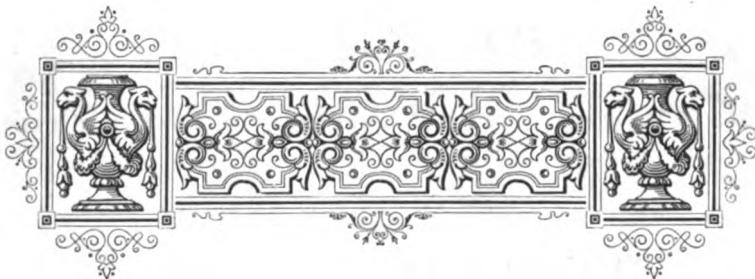
(ESTABLISHED 1850. SOLE OWNER: ARVID NILSSON)

MANUFACTURERS  
OF ALL KINDS OF  
**FILES** and **RASPS** of best quality  
AND OF  
**Sandblast Files**  
of superior sharpness and durability.

#### Prizes received at Exhibitions

in Stockholm 1851, London 1851, Paris 1855, Stockholm 1866,  
Paris 1867, Bogota 1874, Moscow 1872, Eskilstuna 1878

and in  
Copenhagen 1888 a 1:st class medal for "superior Files".



# WEDEVÅGS BRUK, WEDEVÅG.

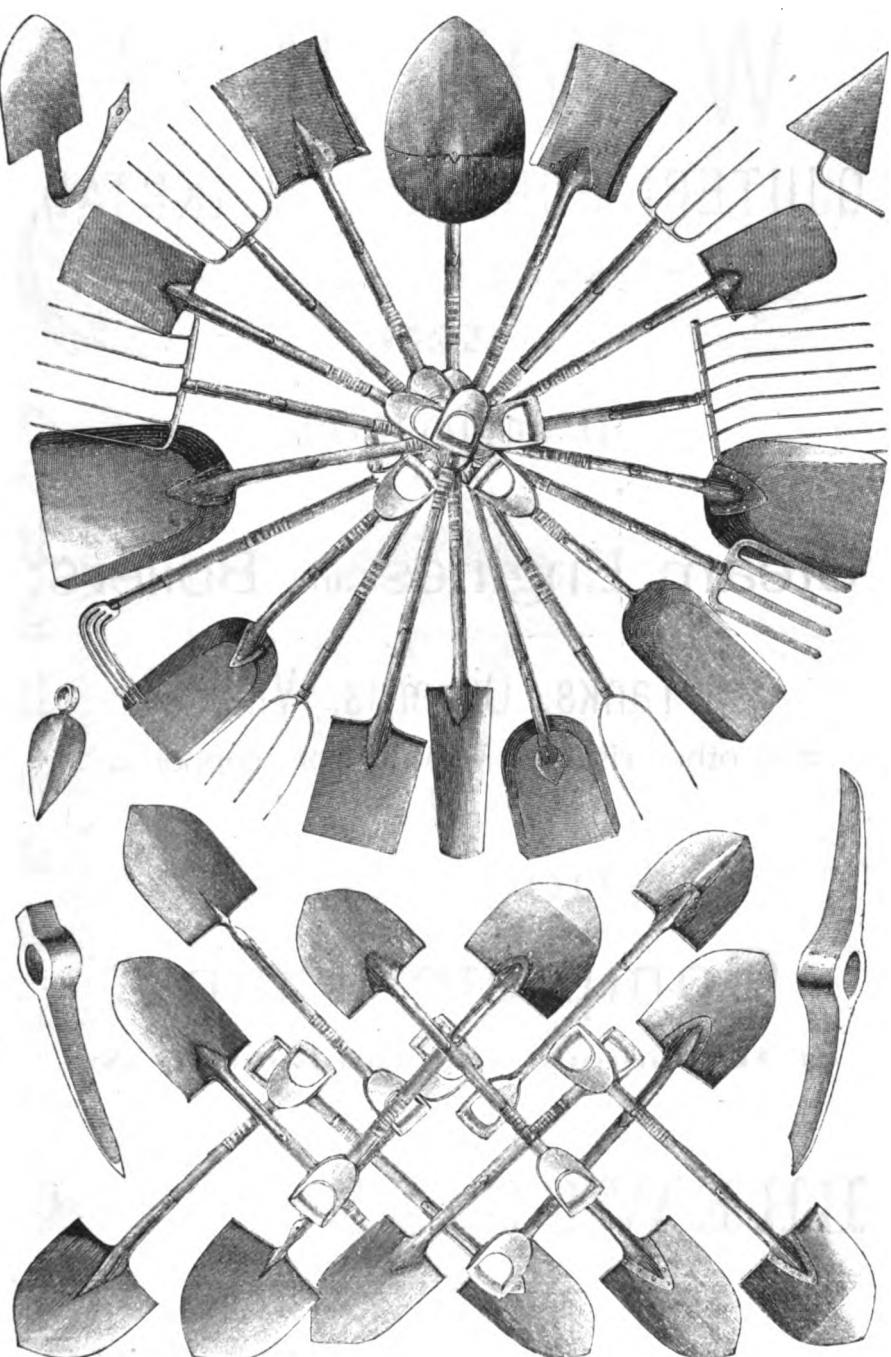


## SPECIALITY:

HAY & PITCH FORKS,  
SPADES, SHOVELS,  
PICKS etc.

**Post and Telegraph Address:**

## **WEDDEVÅG, SWEDEN.**



WEDEVÅG, SWEDEN.

W. WIKLUNDS  
GJUTERI OCH MEK. VERKSTAD,  
—♦ STOCKHOLM. ♦—

Manufacturers

—♦ of ♦—

Steam Engines and Boilers;

—AND OF—

Tanks, Cisterns, Vats

and other riveted work in iron, copper &c.

Speciality:

Complete Plants

of Machinery and Implements &c.

→ for ←

BREWRIES ♀ ♀ ♀ ♀

—AND—

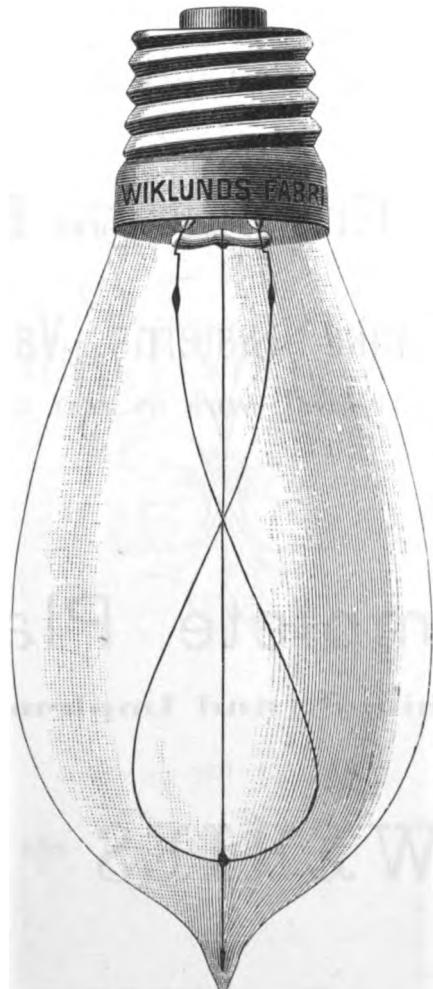
♀ ♀ ♀ ♀ LAUNDRIES.

# W. WIKLUND, STOCKHOLM.

Manufacturer and Exporter  
OF

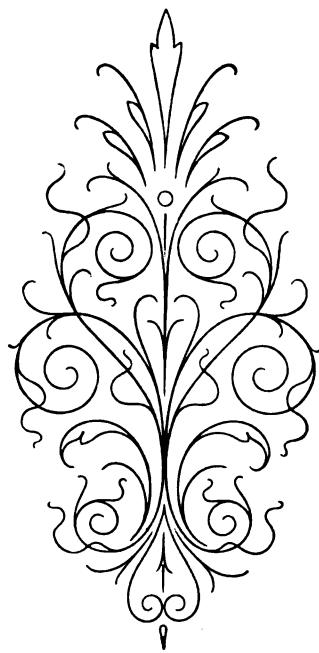
## INCANDESCENT LAMPS

The principal advantages of these lamps are:  
**DURABILITY** **ECONOMY** **CHEAPNESS.**



of a special design (Mr C. A. BÄCKSTRÖM'S patent) and superior  
to any previously in use.

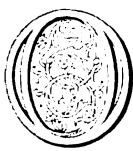
The principal advantages of these lamps are:  
**DURABILITY** **ECONOMY** **CHEAPNESS.**



# The Techno-Chemical and Stone and Glass Industries.







f the many articles, belonging to these industries, we shall here only have occasion to refer to some of the most prominent ones.

Swedish matches are, next to Swedish iron, perhaps the article of Swedish origin, that is most universally known abroad. They have always enjoyed a high reputation for their excellent quality, and, in spite of numerous imitations and the keenest competition from other countries, they still continue to hold the leading position in the match trade on the markets of the whole world.

The superiority of the Swedish match industry dates as far back as 1852, in which year the invention was made of manufacturing matches without sulphur and phosphorus at the »Jönköpings Tändsticksfabrik», the name of which, coupled with the »Swedish Safeties», has, in the course of years, become a household word in almost every part of the globe. The Jönköping match factory was at the time mentioned the only one of its kind in Sweden, but since then numerous similar establishments have been erected in different parts of the country, and the production of the same has been steadily on the increase, so that, whereas in 1870 Sweden had 24 match manufactories with a total output of a value of 2,012,881 kronor, in 1890 26 factories turned out matches for an amount of 7,549,481 kr. The production had accordingly nearly quadrupled in twenty years.

The Swedish match manufactories produce as well lucifer as safety matches, to suit different markets. In countries having a wet climate, especially India, the lucifer match as a rule is preferred, as the tip of the »Safety» will easily take moisture and fall off. The production

of safety matches has, however, for Sweden been more important than that of lucifer matches, which is quite natural, as the former industry originates from our country, and its development from the beginning is due to the clear-sightedness and energetic efforts of two Swedish men.

The export of Swedish matches, that up to quite recently, almost exclusively, went via Hamburg and some few English ports, and was disposed of through merchants at those places, is now beginning to find its own direct ways to the transatlantic consumers.— We annex below some figures regarding the export of Swedish matches during the last years:

In 1880 were exported	9,716,711	kg.
» 1881	»	10,683,109
» 1882	»	10,595,940
» 1883	»	11,953,827
» 1884	»	12,401,406
» 1885	»	13,860,434
» 1886	»	14,997,670
» 1887	»	12,599,843
» 1888	»	13,231,261

Wood pulp is another article, that is largely exported from Sweden, where the first wood pulp mill was erected in 1857 and up to 1866 remained the only one of its kind in the country. In 1875 the number of mills had reached 18, with a production of 8,168,048 kg. pulp, valued at 1,123,816 kronor; in 1885 the pulp mills were 38, turning out 28,144,665 kg. of stuff, estimated at 3,420,359 kronor, and, notwithstanding the downward tendency of the prices of late years, the number of Swedish wood pulp manufactories has now (1891) increased to 118, with an annual output of nearly 150,000,000 kg.

Most of the Swedish wood pulp manufactories are based on the mechanical or grinding process. Lately, however, the chemical processes for treating the wood fibres, viz. the natron-cellulose and the sulphite methods, have been more and more appreciated even in our country.

The Swedish export of wood pulp has during the last years increased heavily, and though our own paper mills are still the largest

consumers of the article, the quantities exported have assumed considerable proportions, as will be seen from the following figures:

Year.	Quantity exported.
1872.....	5,786,432 kg.
1876.....	5,917,908 "
1880.....	9,478,897 "
1885.....	15,822,013 "
1886.....	25,630,431 "
1887.....	28,571,992 "
1888.....	38,472,794 "

In connection with the wood pulp industry we shall say a few words about the Swedish paper mills. As longs as rags were the sole raw material, used in the manufacture of paper, the paper industry could never attain any large proportions, as the supply of the said raw material, as a matter of course, was very limited. With the invention of wood pulp as a substitute for rags, new views opened for the paper industry in Sweden with its far extending forests. In fact, the statistics show, that the annual value of the products of this industry in our country has more than tripled during the last two decades.

We now make paper of all descriptions in Sweden, such as ordinary writing paper; paper for newspapers; paper hangings, borders and similar decorations; cardboard; wrapping and lining paper etc. So called asphalted roofing felt, the production of which has become the speciality of some of our paper mills, is an excellent roofing material, which, on account of its having been impregnated with asphalt tar, also affords considerable protection against fire. Even filtering paper for chemical use is produced in Sweden in an exquisite quality. Envelopes and paper bags are also manufactured on a large scale by some mills.

There are about 40 paper mills and 10 paper hanging factories in work in Sweden, and the value of their production for 1890 was respectively 11,101,871 and 1,019,836 kr. The development of the export trade in paper has kept pace with the increased production, as can be seen from the following figures:

Year.	Quantity exported.
1881.....	6,353,951 kg.
1882.....	7,316,736 "
1883.....	7,877,499 "
1884.....	8,273,173 "
1885.....	9,640,474 "
1886.....	10,526,226 "
1887.....	11,315,717 "
1888.....	13,782,574 "

Most of the paper and cardboard exported went to England.

The manufacture of chalk (whiting) and cement is very important in Sweden, and, as to the latter article, the annual value of its production had risen from 601,830 kronor in 1886 to 1,769,366 kr. in 1890. The steam washed chalk, produced in the south of Sweden, is considered superior to any material of the kind in any country.

For the production of stearine candles, soap, »aseptine», perfumes and ink there is a large number of factories in Sweden, most of which, however, are producing for the home market only. Nevertheless, in some of these articles an export trade of no little importance has been developed during the last years, especially to places, where a good quality is considered of greater consequence than a cheap price.

Glassware is an article, the export of which is extending from year to year. Thus the value of Swedish glass exported, which in 1871 amounted to 206,584 kronor, had in 1881 risen to 919,891 kr. and in 1888 to 1,639,243 kr. The principal items of this export were bottles and table glass.

Only two Swedish establishments were occupied in 1888 in production of chinaware; they employed 1,581 hands and turned out goods for an amount of 2,537,985 kr., of which about one fourth was exported.

In the year just mentioned there existed in Sweden somewhat over 100 stonecutting works, the export of which amounted to nearly 2,000,000 kronor.



# AKTIEBOLAGET BARNÄNGENS TEKNISKA FABRIK

(THE BARNÄNGEN TECHNICAL MANUF<sup>G</sup> CO LIM.)

STOCKHOLM



## Barnängen's Writing and Copying Ink

is decidedly the best of all existing inks and has received prize medals at the Universal Exhibitions in Moscow 1872, London 1873, Paris 1878 and also at the Exhibitions in Copenhagen 1872 and Moscow 1882. For legal documents and other similar papers, intended to last some length of time, this ink is most reliable because of its intensity and durability.

Flowing easily, it has a clear blue color, rapidly changing into black, and, giving no residue, it neither evaporates nor can be blotted out, without the paper simultaneously being spoiled. The ink copies splendidly, even after the lapse of some time, in which latter case, however, the paper must be slightly more wetted. This ink is strongly recommended to Public Offices, Banks, Merchants and Schools, and we are convinced, that a short trial will prove its superiority to all other kinds of ink offered.



*N. B. Kindly see that each bottle is provided with our trade mark (as in margin), without which we cannot guarantee, that the article is of our own make.*

*Barnängens Ink can be had from all the principal stationers in the Old and New World.*

PURVEYORS  
to H. M. the King of Sweden and Norway.

ANNEBERGS TÄNDSTICKSFABRIKS  
AKTIEBOLAG,  
(The Anneberg Match Manufacturing C:o, Lim:d),  
— \* Solberga, Sweden. \*

Manufacturers of the celebrated

**SNAKE SAFETY MATCH.**

These matches  
do not  
glow when  
extinguished.



Special  
Patented  
Safety match.

KNOWN ALL OVER THE WORLD.

Billeruds Aktiebolag,

SEFFLE, SWEDEN.

Makers of

*Sulphite Wood Pulp.*

*Samples and prices on application.*

**Billeruds Aktiebolag,**  
SEFFLE, SWEDEN.

# Brusafors Aktiebolag,

MARIANELUND, SWEDEN.



— MANUFACTURERS OF —

# Sulphate Wood Pulp

of first quality for export.

Brusafors Aktiebolag,

MARIANELUND, SWEDEN.

K K M A N & C : O ,

GOTHENBURG, SWEDEN.

ESTABLISHED 1809.

Exporters of  
Chemical and Mechanical

## WOOD PULP

of various descriptions.

Agencies in London, Sheffield, Paris, New York etc.

# *Eda Aktiebolag,*

(the Eda Glass Works)  
CHARLOTTENBERG.

*Best Swedish Table Glass,  
cut, etched, engraved, and plain, blown, moulded, and pressed.*

*Specialities: Coloured and Ruby goods.*

*The Eda Glass Works make goods to the customers' own patterns, which latter are kept at the works solely for the customers' account.*

*London Agents:*

*Messrs R. JOHNSTON & Co.,  
9, New Broad Street.*

*Samples and quotations on application.*

---

## **FISKEBY PAPPERSBRUK,**

(The Fiskeby Paper Mills)  
FISKEBY, SWEDEN.



Manufacturers of  
**ASPHALTED ROOFING FELT,**  
PAPER SHEATHING,  
PAPER FOR PAPER-HANGINGS, WHITE AND COLORED,  
WRAPPING PAPER, coarse and fine, of different qualities,  
**SMALL HANDS AND SCIP PAPER.**

For samples and prices please apply to

**FISKEBY FABRIKS AKTIEBOLAG,**  
FISKEBY, SWEDEN.

— PRIZE MEDALS. —



# Henrik Gahn's Aseptin-Amykos-Aktiebolag,

(The Henrik Gahn Aseptine-Amycose C:o, Lim:d.)

UPSALA, SWEDEN.

ESTABLISHED 1867.

Sole Manufacturers and Exporters of

**HENRIK GAHN'S** Amycose for the Toilet (for preserving the teeth and the skin);

**HENRIK GAHN'S** Aseptine (for preserving food);

**HENRIK GAHN'S** Concentrated Amycose (for medical use);

**HENRIK GAHN'S** Toilet Soap;

**HENRIK GAHN'S** Household Soap;

**HENRIK GAHN'S** Laundry Soap.

Numerous certificates as regards the excellent properties and the effectiveness of *Henrik Gahn's Amycose* given by the most eminent medical Authorities, e. g. Mr. *Joseph Lister*, Professor of Surgery in Edinburgh, Mr. *C. B. Mesterton*, Professor of Surgery in Upsala, and Mr. *Mosetig Moorhof*, Professor of Surgery in Vienna.

Several Medals received at the International Exhibitions in Moscow 1872, in Vienna 1873, in Bogota 1874, in Brussels and Philadelphia 1876, in Paris 1878, and at the Geographical Congress in Paris 1875.

Henrik Gahn's Aseptin-Amykos-Aktiebolag,  
Upsala, Sweden.



Purveyors  
to H. M. The Queen of Sweden and Norway.

# Jönköpings Tändsticks-Fabrik,

JÖNKÖPING, SWEDEN.

BELONGING TO

## Jönköpings Tändsticksfabriks Aktie Bolag.

MANAGING DIRECTOR:  
BERNHARD HAY.



Jönköpings Tändsticksfabriks Aktie Bolag,

— — — Jönköping, Sweden. — — —



Manufacture

ORDINARY

**LUCIFER MATCHES,**

**SAFETY MATCHES**

WITHOUT PHOSPHORUS & SULPHUR,

WAX VESTAS, MATCH STANDS etc.

The paraffined Safety Matches of this Co:s make do not contain Phosphorus, Sulphur, nor any other poisonous matter whatsoever, leave no unpleasant or unwholesome smell and are not exposed to spontaneous ignition.

*The products of the Jönköpings Tändsticksfabriks Aktie Bolag have been awarded Gold, Silver and other Prize Medals at the Universal Exhibitions in Paris 1855, London 1862, Malmö 1865, Stockholm 1866, Paris 1867, Amsterdam 1869, Copenhagen 1872, Moscow 1872, Vienna 1873, Philadelphia 1876, Paris 1878, Malmö 1881, Amsterdam 1883, Madrid 1883, Antwerp 1885, and Copenhagen 1888. They are in brisk demand all over the world, and have everywhere met with general approbation.*

*In 1891 the works employed 375 different machines, driven by 11 steam engines; Production during the same year: 250,533,828 boxes, representing a value of Kr. 2,374,092: 17 (£ 131,894: —/-).*

*Depots in all large commercial towns.*

Price lists and particulars on application to the

*Jönköpings Tändsticksfabriks Aktie Bolag,  
Jönköping, Sweden.*



# HYLIN & Co.,

STOCKHOLM,

ESTABLISHED 1857

SOAP MANUFACTURERS AND PERFUMERS.

Annual production of Soap 3,000,000 kilogr.

Possessing  
several  
highclassed  
Medals, awarded  
at the  
Universal



Exhibitions in  
London 1862,  
Paris 1867  
and at all  
Swedish  
Exhibitions.

## SPECIALITY:

*The PATENT LAUNDRY SOAP suitable for hot climates and  
well known in England and the Colonies.*



# Katrinefors Aktiebolag,

Paper Mills,

MARIESTAD, SWEDEN.

Manufacturers of

Paper for MATCH MANUFACTORIES,  
colored or white, in reams or rolls;

Wrapping Paper for Bottles;

also Wrapping Paper of thinner qualities, as well as

**W. C. Paper in rolls.**

For samples and prices please apply to

**KATRINEFORS AKTIEBOLAG,**  
Mariestad, Sweden.

# Kosta Glass Works,

— KOSTA, (SWEDEN). —

Manufacturers of

**CRYSTAL TABLEWARE,**

plain and cut.

## SPECIALITIES:

Thin, plain, light crystal tumblers and wines, also decanters,  
tankard-jugs, sugars and creams etc;

**CHIMNEY-GLASSES,**

with customer's name and address nicely etched on the top;

**Electric lamps; Globes; Reflectors etc.**  
of the newest patterns.

# KRITBRUKSBOLAGET,

(THE CHALK WORKS COMPANY)

• MALMÖ (SWEDEN). •

Recommend their production

—♦ OF ♦—

## Steam-washed Chalk (Whiting), the best of its kind hitherto known in the world.

*This excellent, chemically pure material, containing more than 99 per cent of pure carbonate of lime, is totally free from sand and other impurities and leaves no settling, when mixed with water or oil. On account of its fineness and purity, it is therefore universally acknowledged to be unsurpassed by any other chalk in any country.*

*The large Silver Medal at the Exhibition in Moscow 1872 was granted to this Chalk.*



Each cask, emanating from our Works, bears the brand as above.

**Kritbruksbolaget i Malmö:**  
**A. F. HÖRSTEDT.**

Telegraphic Address:

**Hörstedt, Malmö.**

# C. A. Kullgrens Enka,

UDDEVALLA.

Exporter of

## GRANITE,

rough and polished of all dimensions,

red, green and grey,

for Monuments, Tombstones, Slabs etc.;

also of **Granite** for

paving and building purposes.

# C. A. Råberg's Tapetfabrik,

STOCKHOLM, SWEDEN.

ESTABLISHED 1849.

The oldest and most reputed Manufactory in Sweden of  
PAPER-HANGINGS,

Paper Borders and similar Decorations,  
all free from arsenic.

The highest Prize Medals awarded at the principal  
International Exhibitions.

The goods are all made to original designs and include the most  
tasteful and modern shades of color.

Export to all parts of the world.

Samples and prices on application. Correspondence in English, German and French.

# LESSEBO BOLAG,

— Lessebo, Smeden. —

## MANUFACTURERS

OF ALL KINDS OF

Hand- and Machine-made Paper

such as

Fine and Superfine Printings, Plates, Charts,  
Music, Tub-sized and Loft-dried Writings.

— Speciality: —

## TUB-SIZED PURE RAG PAPER

(hand- and machine-made), and better qualities of

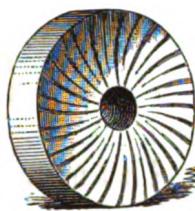
## PRINTING PAPER.

THE LESSEBO PAPER is strongly recommended for writing and printing purposes, especially in cases where strength and durability are required (for inst. in Government and Record Offices, Libraries etc.).

→ The Lessebo Company are ←  
**Contractors for the supply of Record Paper to the  
Swedish Government, and also Contractors for extra strong  
Printing Paper to the Danish Government.**

THE LESSEBO works were erected in 1660. The Royal Privileges were granted to the Paper Mills in 1719. Paper making by machinery was commenced in 1836.

The products of the Works have received Prize Medals at several Exhibitions. At the General Scandinavian Industrial Exhibition in Copenhagen 1888 the Lessebo Paper Mills were the only Works in the trade, which obtained the First Prize.



**FERD. JENSEN,  
MALMÖ.  
MILLSTONE MANUFACTORY,**

Established 1876.

First class Medals received at the Exhibitions in Berlin 1879, Malmö 1881 and Copenhagen 1888.

Millstones (from Swedish and French quarries) suitable for grinding all kinds of Grain, Cement, Phosphate, Plaster, Enamel, &c.

Bolting Cloth of silk, Flour Mill Rolls, Centrifugal Sifters, Flour Dressers, Cotton Belting and all other articles, belonging to the Flour Mill Industry.

*Correspondence in German, French and Swedish.*

**LARS MONTÉN,  
STOCKHOLM.**

ESTABLISHED 1823

MANUFACTURER and EXPORTER of  
**SOFT SOAP and STEARINE CANDLES,**

and Sole Proprietor of the

**CLARA STEARINE AND SOAPWORKS**  
(*"Clara Tekniska Fabrik"*)

and the

**ALVIK BARREL & KEG MANUFACTORY,**  
(*"Alviks Mekaniska Tunnbinderi-Fabrik"*)

*Working on the American system.*

Highest Awards at Exhibitions in LONDON, PARIS, STOCKHOLM and COPENHAGEN.



# MUNKEDALS AKTIEBOLAG,

PAPER MILLS,  
Uddevalla, Sweden.

MAKERS OF

## WRAPPING PAPER AND BOARDS,

ordinarily finished as well as highly glazed.

## HANGING PAPER,

(LONG ELEPHANTS)

various colors and patterns.

Weekly turnout 60 tons.

*Export to all parts of the World.*

For samples and prices apply to

**MUNKEDALS AKTIEBOLAG.**

Uddevalla, Sweden.



# MUNKSJÖ AKTIEBOLAG

JÖNKÖPING,  
SWEDEN.

JÖNKÖPING,  
SWEDEN.



ESTABLISHED 1862.

## MANUFACTURERS

of all kinds of Paper for Building Purposes, e. g.:

### *Paper Sheathing*

of different qualities for lining walls outside and inside  
against damp and draught;

### *Impregnated and Antiseptic Paper*

for use in ceilings;

### *Thick Gray Rag Paper*

for covering floors under the carpets, for isolating purposes etc.;

### *Asphalted Roofing Felt*

(*Tarred Board*)

for roofing purposes, in connection with *Roofing Paint*, specially prepared  
for coating thi; board, and always ready for use;

### *Paper*

of various *strong*, and *universally acknowledged good qualities*,  
made of Cellulosa Pulp, especially:

*Wrapping Paper* and *Paper for Industrial purposes*, e. g. for use  
in the Ironmongery Trade, in Match Manufactories, in Cotton Spinning  
Mills, and in Envelope and Bag Manufactories etc.

» Large Export since many years back. «

# J. H. Munktells Pappersfabriks Aktiebolag,

GRYCKSBO, SWEDEN.

FOUNDED 1717.

MANUFACTURERS

OF

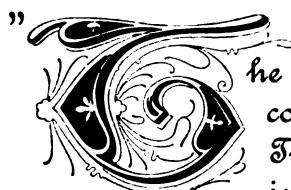
THE WELLKNOWN

## Grycksbo Filtering Paper,

the valuable qualities  
of which have been de-  
scribed by

BERZELIUS

in his work "Treatise  
on Chemistry" (volume  
VIII, page 222) in the  
following manner:



"The best filtering paper I know of comes from Grycksbo in Dalecarlia. The water, with which it is made, is so pure, that it does not present any reaction, indicating the presence of foreign matters, nor does it retain any earthy substance in dissolution. The acids and the water extract nothing from this paper, and, when burnt, the ashes,



which it leaves, are not more abundant, nor of any other nature than those, which come from the most unadulterated linen, that is to say, they do not amount to more than 0,006 of its weight. Latterly they have begun to make this paper an article of export, and there are certainly few localities, where nature has combined so many favorable circumstances as at Grycksbo, for the fabrication of an excellent filtering paper."

•••

THE Grycksbo filtering paper is the best for Chemical purposes on account of its exceptional purity and great filtering power, and it is made as well round, ready for use, as in sheets, treated and not treated by acids.



THE round Paper of the better qualities is packed in original boxes of Birch bark, 500 sheets in each, and is sold for delivery f. o. b. Stockholm or Gothenburg, or c. i. f. any foreign port. Quotations given on application.

THE percentage of ashes is stated on each label, according to analyses made by the most renowned chemists.

Enquiries and Orders to be addressed to the Manufacturers' Export Agent,

**John Bohman,**  
STOCKHOLM.

# Norrköpings Tapetfabrik,

• Norrköping, Sweden. •

The largest Paper-hanging Works in the  
Scandinavian Countries.

Manufacturers and Exporters

—OF—

## PAPER HANGINGS, PAPER BORDERS,

AND SIMILAR

Decorations,

all free from poisonous matters.

The finest and most elegant workmanship guaranteed,  
as well as the most modern patterns, to suit  
the taste of different markets.

Export to all parts of the world.

Samples and Prices to be had on application.

Correspondence in English, German and French.

Competent and pushing agents wanted.

Norrköpings Tapetfabrik,

Norrköping, Sweden.

# Reijmyre Aktiebolag,

Reijmyre, Sweden.

Manufacturers and Exporters

of

## Glassware

of  $\frac{1}{1}$  and  $\frac{1}{2}$ , crystal,  
white and coloured.

Speciality:

Sets of glass, plain, cut, etched and engraved.

# Stjerns Aktiebolag,

\* Uddeholm, Sweden. \*

Manufacturers

OF

## Chemical Wood Pulp,

Unbleached and Bleached, in all Colours.

# Stjerns Aktiebolag,

UDDEHOLM, SWEDEN.

# Storviks Sulfit Aktiebolag,

(The Storvik Sulphite Co, Lim:d)

STORVIK, SWEDEN.

Mills for the Manufacture of

## Sulphite Wood Pulp.

Samples and Prices on application to

Storviks Sulfit Aktiebolag,

STORVIK, SWEDEN.

## SÖDERTELJE Tändsticksfabrik,

(The Södertelje Match Manufactory)

Södertelje, Sweden.

## SAFETY MATCHES

of the following brands:



The red Rose.



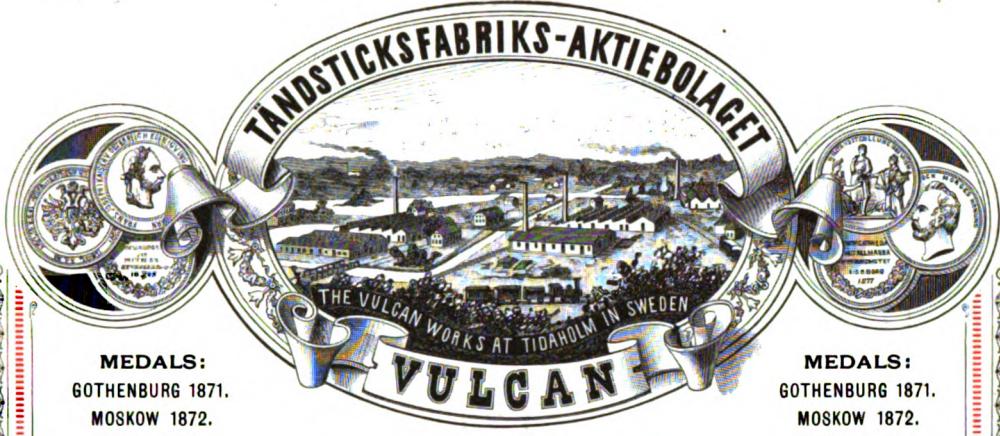
The Ship.



The red Tulip.

Application for Prices, Samples &c. to be addressed to

ERIC HOLMBERG,  
SÖDERTELJE, SWEDEN.



MEDALS:  
GOTHENBURG 1871.  
MOSKOW 1872.  
VIENNA 1873.

MEDALS:  
GOTHENBURG 1871.  
MOSKOW 1872.  
VIENNA 1873.

# The Vulcan Match Manufacturing Co.

HEAD OFFICE:  
GOTHENBURG, SWEDEN.

WORKS:  
TIDAHOLM, SWEDEN.

BEWARE OF TRADE MARK IMITATIONS!



MANUFACTURERS OF WOODEN MATCHES,  
SUPERIOR TO ANY IN THE MARKET.

N:o 2.

N:o 9.



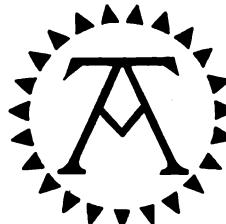
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THE VULCAN MATCHES ARE EXPORTED TO EVERY PART OF THE GLOBE,  
THE COMPANY HAVING REPRESENTATIVES IN THE PRINCIPAL COMMERCIAL  
CITIES OF EUROPE, AND ALSO IN NEWYORK, U. S. AMERICA.

Tidafors Sulfit Aktiebolag,  
UDDEVALLA, SWEDEN.



Manufacturers of  
**DRY SULPHITE CELLULOSA**  
(WOOD PULP)  
of first quality for  
**PAPER MAKING.**  
Enquiries to be addressed to  
**TIDAFORS SULFIT AKTIEBOLAG,**  
UDDEVALLA, SWEDEN.

**GUSTAF WALL,**  
GOTHENBURG.

Exporter

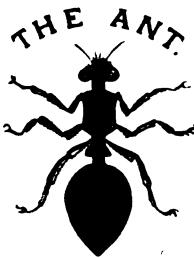
— of —

**WOOD PULP,**  
Mechanical and Chemical,

— and —

**WOOD PULP BOARDS.**

Please see page 38.



REGISTERED  
TRADE MARK.



Packet label.



REGISTERED  
TRADE MARK.

# UDDEVALLA



N:o 1.



N:o 4.

## TÄNDSTICKSFABRIK,



N:o 6.



N:o 2.

Letters and enquiries to  
be addressed to:

Uddevalla Tändsticksfabrik,  
Uddevalla, Sweden.

UDDEVALLA,  
SWEDEN.



N:o 7.



N:o 8.

Letters and enquiries to  
be addressed to:

Uddevalla Tändsticksfabrik,  
Uddevalla, Sweden.

# **WILH. WALLIN,**

**SÄTRA BRUK,**  
**CARSLUND, SWEDEN.**

Manufacturer of thoroughly Bleached  
**DRY WOOD PULP,**



made from the very best Aspwood, washed  
in the clean water of the spring lake "Unden"  
and dried in a newly constructed,  
dust-free Drying Apparatus.

For further information please apply to  
the Maker under the above named address.

Attention is called to the annexed  
Trade Mark.

---

**Önans Aktiebolag,**  
Trollhättan, Sweden.

---

MANUFACTURERS OF  
*White and Brown Mechanical*  
**WOOD PULP**  
for PAPER MAKING etc.

TRADE MARK:



SKYDDS MÄRKE.

# The Textile Industry.





ince olden times the manufacture of textile articles formed one of the most important branches of the domestic industry in Sweden, occupying various members of the family, especially during the long winters, when they were free from agricultural labour, and it was not until about the first half of the eighteenth century, that this industry developed from a domestic into a manufacturing one. This development is closely connected with the name of Jonas Alströmer.

After a residence of several years in foreign countries, especially England, where he witnessed the immense impetus, given to the various branches of industry through the introduction of machinery, this pioneer of Swedish arts and industry returned home and in his native town, Alingsås, founded several spinning and weaving mills. These were soon followed by other establishments of the same kind in other parts of the country, so that in 1761, in the Swedish weaving factories only, about 18,000 hands were employed. — This was, of course, at that time something very grand, but it is self evident, that the manufacture of textile fabrics on a large scale, in Sweden as elsewhere, is the work of the last decades, and that it has gone hand in hand with the recent development of the machines and other mechanical appliances, nowadays employed in the textile industry.

Sweden has at present a large number of spinning and weaving factories, but their products are mostly disposed of in the home market, and it is only to the neighbouring countries, that an export trade of some importance has been brought about in the same.

In 1886 there were 31 cotton spinning mills in Sweden with an output of 11,075,454 kronor, which in 1890 had risen to 12,950,083 kronor. During the same period the number of wool spinneries increased from 66 to 98, and the value of their production from 1,951,420 to 5,052,577 kronor.

Amongst the weaving factories in Sweden the cotton weaving mills rank first, their output in 1890 being estimated at 13,655,437 kronor. Cloth was turned out in the same year for 13,636,214 kronor, and other woollen goods for 4,968,302 kronor. There are also several plants in Sweden for the manufacture of linen cloth, jute cloth and bags, tarpaulin and tent cloth, silk stuffs and hosiery, the production of which in 1890 amounted to some 5,000,000 kronor.

In 1890 cotton stuff was exported for about 3,500,000 kronor, and cloth and woollen goods for something over 2,500,000 kr. Most of this export went to Norway.



# DRAGS AKTIEBOLAG,

(The Drag Company, Lim.)

**NORRKÖPING.**

Established in 1854

Managing Director: AXEL SWARTLING.

Manager of the Works: FREDRIK BLOMBERGH.

**Army Contractors and Makers** of all kinds of  
**Cloth** for dresses, suits, trousers, overcoats,  
ulsters &c., and also of **Lining** etc.,  
**all made of pure, unmixed wool.**

Prizes awarded at the following  
Exhibitions:

MALMÖ	1857.	PARIS	1867.
GOTHENBURG	1860.	COPENHAGEN	1872.
LONDON	1862.	VIENNA	1873.
NORRKÖPING	1863.	PHILADELPHIA	1876.
MALMÖ	1865.	PARIS	1878.
STOCKHOLM	1866.	MALMÖ	1881.

COPENHAGEN 1888.

Registered trademark:



Mölnlycke Manufaktur Aktie Bolag, Göteborg,  
(The Mölnlycke Manufacturing Company, Limited, Gothenburg)  
SWEDEN.

ESTABLISHED IN 1855

Weavers, Calico-Printers, Dyers, Bleachers.  
1000 Power-Looms,  
driven by water.

Makers of

MOLES & CORDS,

printed & dyed of different qualities.

**Prints: fast colours, fine collection**

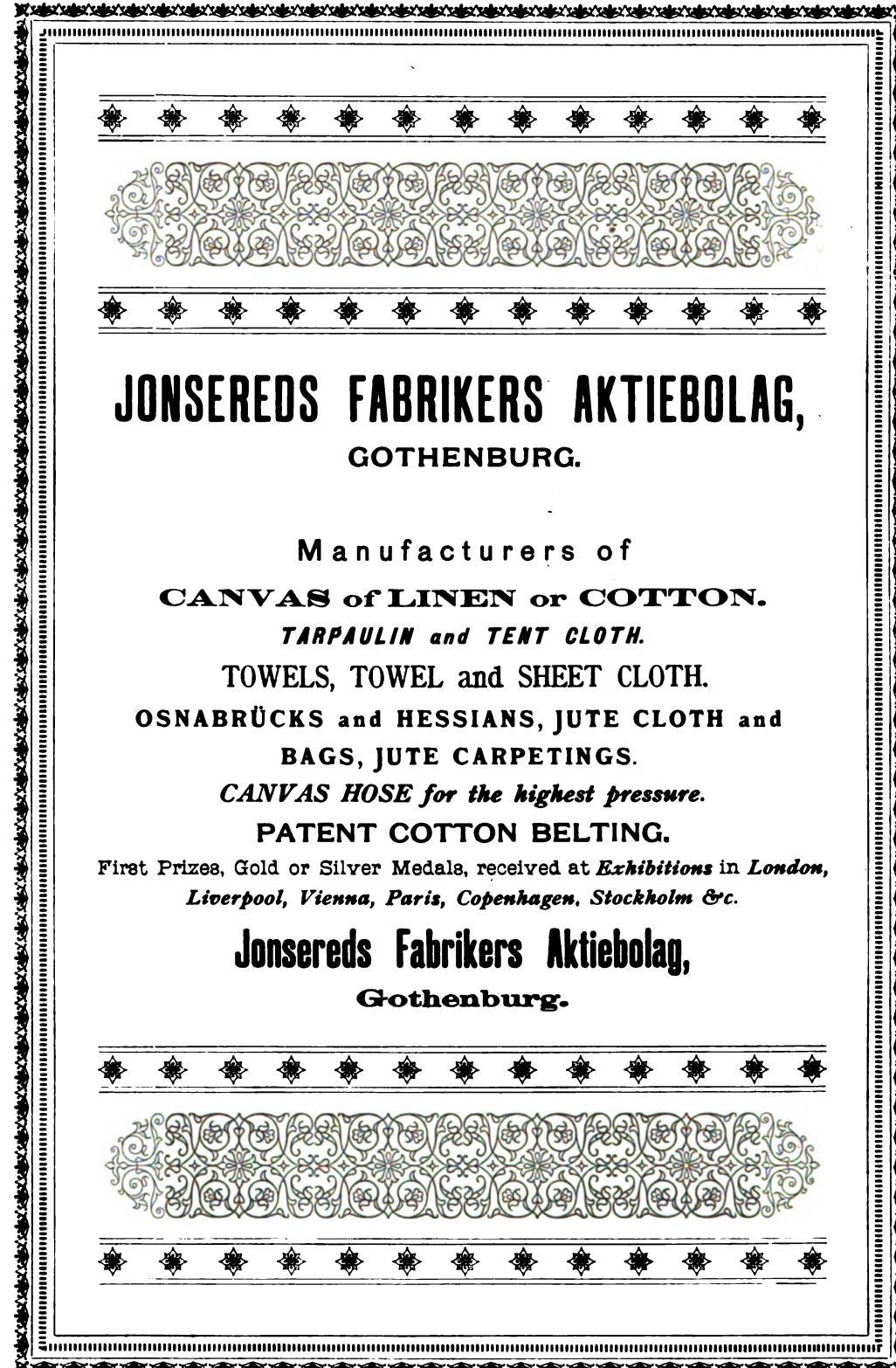
**Dyed cloths: plain and impervious.**

**Large stock. Quick delivery.**

*Direct lines of steamers from Gothenburg to the principal ports  
of Europe and, via Hamburg, to transatlantic markets.*

**English, German & French Correspondence.**

**Please apply for Prices and Samples.**



**JONSEREDS FABRIKERS AKTIEBOLAG,  
GOTHENBURG.**

Manufacturers of  
**CANVAS or LINEN or COTTON.**

*TARPAULIN and TENT CLOTH.*

**TOWELS, TOWEL and SHEET CLOTH.**

**OSNABRÜCKS and HESSIANS, JUTE CLOTH and  
BAGS, JUTE CARPETINGS.**

*CANVAS HOSE for the highest pressure.*

**PATENT COTTON BELTING.**

First Prizes, Gold or Silver Medals, received at Exhibitions in London,  
*Liverpool, Vienna, Paris, Copenhagen, Stockholm &c.*

**Jonsereds Fabrikers Aktiebolag,  
Gothenburg.**

# Liquors and Comestibles.

---







In article, belonging to this category, and which is quite peculiar to Sweden, is the Swedish punch, a national beverage (composed of arrack, sugar and water), which is consumed in large quantities in all parts of the country, and with which most foreigners, visiting Sweden, also make acquaintance. This drink has on account of its sweetness not yet been much in demand in countries, where people generally are accustomed to stronger and »drier» liquors, but, nevertheless, the export of this article is slowly extending, and it has found its way even to many remote parts of the globe.

An export of great importance has lately been carried on from Sweden in spirits (rectified alcohol). The quantity exported, which in 1880 was 6,690,790 litres, had in 1887 risen to 38,372,244 litres, which was the highest point attained. This export has from that time been decreasing owing to the fact that Spain, which country once was our principal customer in this article, has now almost ceased to import the same.

The value of the ale and stout production in Sweden reached in 1890 14,793,103 kronor. All the technical improvements, introduced of late years in this industry, have been turned to account in the Swedish brewing establishments, the products of which, therefore, now stand comparison in every respect with the make of the great continental breweries. All Swedish ale exported is, of course, specially prepared for that purpose, as a proof of which it may be mentioned that, when the »Vega» had accomplished her famous long

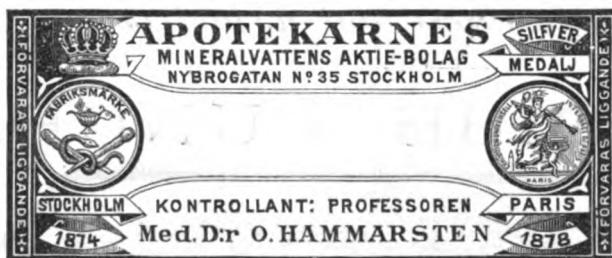
tour round Europe and Asia, the ale, that was in store at the end of the voyage, turned out to be quite as palatable, as it was when it was put on board the ship, though it had passed through various climates, from the cold of the Arctic ocean to the heat of the tropics.

Artificial mineral waters are produced by a large number of factories, mostly, however, for supplying the home requirements.

In fresh fish (herrings) a large export is made during the season from the west of Sweden, especially to Germany, Denmark, Russia, and Great Britain. The value of this export amounted to nearly 16,000,000 kronor in 1890. Preserved fish and vegetables in tins are also being exported from Sweden in quantities increasing from year to year.



# APOTEKARRES MINERALVATTENS AKTIE-BOLAG, STOCKHOLM, SWEDEN.



Vichy,  
Apollinaris,  
Soda,  
Seltzer,  
Biliner,  
Carlsbader,  
Emser,  
Marienbader.

*Artificial Mineral Waters*  
of all kinds made under control of the highest Swedish  
medical Authorities.

## BJURHOLMS BRYGGERI-AKTIEBOLAG, **STOCKHOLM.**

ESTABLISHED 1852

BREWERS and EXPORTERS

or

Brown Stout, Porter, Pilsener and  
Pale Ale, specially prepared for Export ("Marsöl").

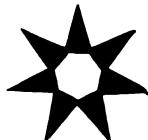
Annual production: 348,000 gallons.

Number of Hands employed 125.

Medals awarded at the international Exhibition  
in Paris 1878 and at all Swedish Exhibitions.

The Bjurholm Brewery Co., Limited.  
Agents wanted in all countries.

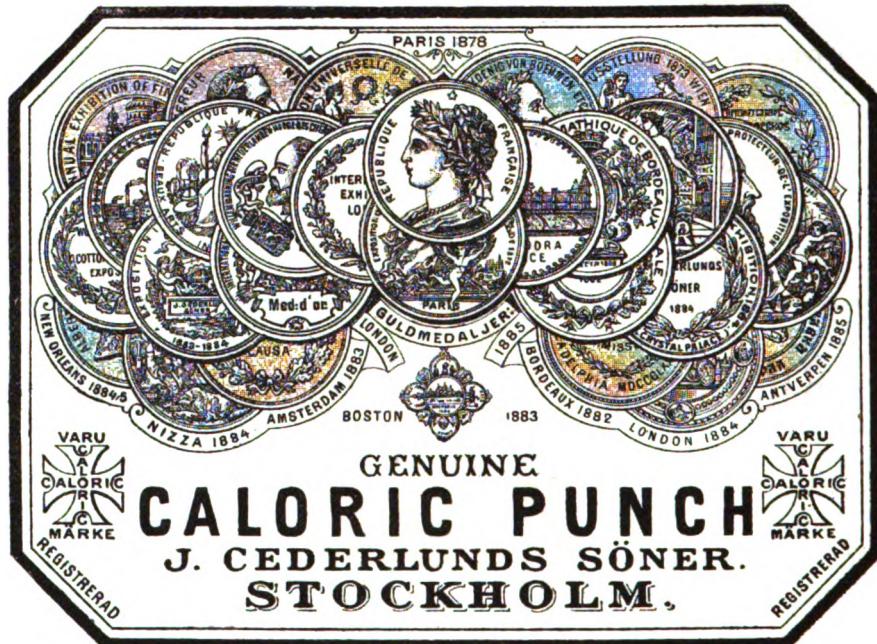
REGISTERED MARK



# J. CEDERLUNDS SÖNER, STOCKHOLM.

STOCKHOLM.

**ESTABLISHED 1822.**



## Nineteen Prizes Awarded

—whereof

Gold Medal at the London International Exhibitions 1884 and 1885.  
The only Gold Medal awarded at the Universal Exhibitions in Paris  
1878, Bordeaux 1882, Amsterdam 1883, Boston 1883, Nice 1884,  
New Orleans 1884 and 1885, Antwerp 1885 and Barcelona 1888.

J. Cederlunds Söner,  
STOCKHOLM.

# C. A. Lindgren & Co.,

—→ STOCKHOLM. ← —

REGISTERED  
TRADE MARK.  
No. 3661.

REGISTERED  
TRADE MARK.  
No. 3661.



*Manufacturers and Exporters of*  
**Extra Dry Swedish Punch**

*of the very best quality, to be had at all Restaurants  
and Cafés, as well as on board of all large Steamers, in Sweden, Norway,  
Denmark, and Finland.*

**Gold Medals awarded at the Exhibitions in London 1884 and 1885,  
in Antwerp 1885, in Copenhagen 1888, and at the Great International  
Exhibition in Paris 1889.**

**C. A. Lindgren & Co.,  
STOCKHOLM.**

# MÜNCHENS BRYGGERI-AKTIEBOLAG,

(The München Brewery Co., Lim:d.)

STOCKHOLM, SWEDEN.

—→ (Established 1856). ← —

Brewers and Exporters

—OF—

## Lager Bier and Pilsener Bier.

Speciality:

Extra Bier (Pale Ale),

specially prepared for export.

Please observe the annexed label, which is registered as our  
TRADE MARK.

# Nürnberg's Bryggeri-Aktiebolag,

(The Nürnberg Brewery Co., Lim:d.)

—→ STOCKHOLM, SWEDEN. ← —

Brewers and Exporters

—OF—

## Pilsener and Pale Ale

of the finest quality and specially adapted for export to  
transatlantic markets.

Agents wanted.

Correspondence solicited.

# Ravalleri Punch.

Sweet, dry and extra dry.

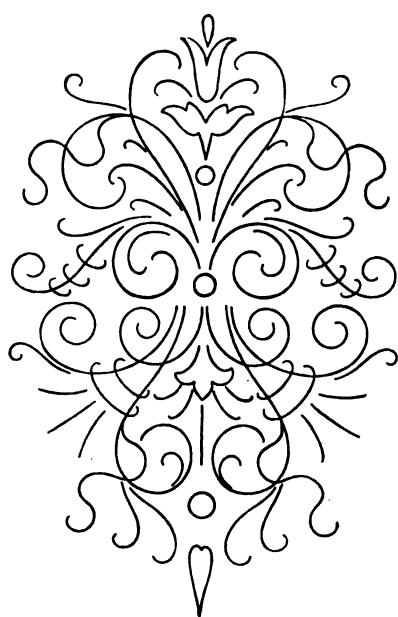


This punch is made of the finest arrack and refined sugar, and has obtained general approbation for its excellent quality in both Sweden and most foreign countries.

Rewards in Bordeaux, Calcutta, Gothenburg and Karlstad.

Brandy (fine Champagne)  
of good quality also to be had at very low prices.

*Otto Wallenius & Co.,*  
**GOTHENBURG, SWEDEN.**



# Indices.







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## I. Classified List of Advertisers.

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<b>Höglund's, N. M., Sons &amp; Co.</b> , Stockholm.	Pigs, Blooms, Billets, Rods, Hammered and Rolled Bars.	59.
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<b>Renström, Sw. &amp; Co.</b> , Gothenburg.	Hammered & Rolled Bars, Rods, Billets, Blooms, etc.	67.
<b>Reuterswärd, P.</b> , Stockholm.	Bar Iron, Bar Ends, Pig Iron.	66.
<b>Setterwall, Carl &amp; Co.</b> , Stockholm.	Swedish Iron & Steel.	67.

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<b>Wall, Gustaf, Gothenburg.</b>	Swedish Charcoal Iron, Rods, Blooms, etc.	73.
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<b>Nya Aktiebolaget Atlas, Stockholm.</b>	Steam Engines, Portable Engines, Boilers, Railway Materials, Tramway Materials, etc.	79.
<b>Aktiebolaget Bofors-Gullspång, Bofors.</b>	Ordnance, Military Carriages, Shells, etc.	80.
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<b>Aktiebolaget Öfverums Bruk,</b> Öfverum.	Agricultural Implements, Ploughs, Horse Rakes, etc.	94, 95.
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<b>Bultfabriks Aktiebolaget,</b> Hallstahammar.	Bolts, Nuts, Rivets, Railway Spikes.	103.
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<b>Fagersta Bruks Aktiebolag,</b> Westansfors.	Saw Blades, Sledges, Hammers, Picks, Wire Rope, etc.	111.
<b>Gadö Fabriks Aktiebolag,</b> Walbo.	Files and Rasps.	112.
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<b>Jacobsen, Carl &amp; Co., Stockholm.</b>	Butter Extractors, Steam Engines, Boilers, Trashing Machines, Fire Engines, Agricultural Implements, etc.	120—123.
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<b>Munktells Mek. Verkstads Aktiebolag, Eskilstuna.</b>	Portable Engines, Locomotives, Trashing Machines, Steam Engines, Boilers, Machine Tools.	130.

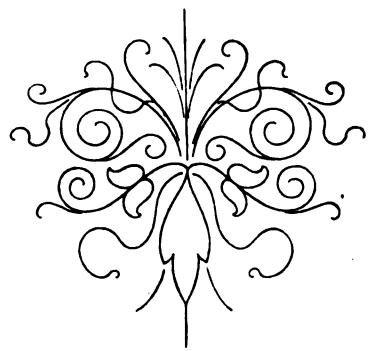
	MANUFACTURERS AND EXPORTERS OF	PAGE OF ADVERTISE- MENT.
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<b>Stridsberg &amp; Blörck,</b> Trollhättan.	Saws, Files, Spades, Shovels, Machine Knives, Sheets, Bar Iron, Tool Steel, In- gots.	134.
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<b>Tesch, W., Stockholm.</b>	Galvanised Steel Hay Rakes, Garden Rakes.	136.
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<b>Kåbergs Tapetfabrik, C. A.,</b> Stockholm.	Paper Hangings, Paper Borders, Decorations.	159.
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<b>Norrköpings Tapetfabrik, Norrköping.</b>	Paper Hangings, Paper Borders, Paper Decorations.	166.
<b>Reijmyre Aktiebolag, Reijmyre.</b>	Glassware.	167.
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<b>Lindgren, C. A. &amp; Co.</b> Stockholm.	Extra Dry Swedish Punch.	187.
<b>Münchens Bryggeri-Aktiebolag</b> , Stockholm.	Lager Bier, Pilsener Bier, Extra Bier (Pale Ale).	188.
<b>Nürnberg's Bryggeri-Aktiebolag</b> , Stockholm.	Pilsener and Pale Ale.	188.
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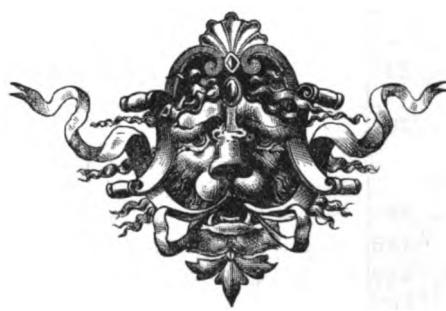
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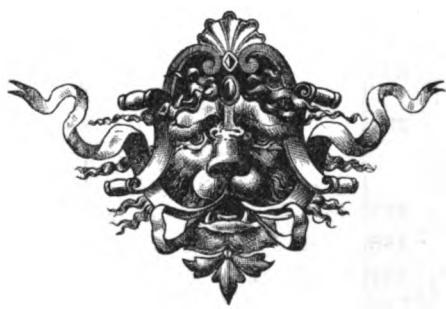




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